MEDICAL JOURNAL OF AUSTRALIA.

Vol. I. SYDNEY : SEPTEMBER 19, 1914. No. 12.

An Address

TO THE ECONOMIC SCIENCE AND STATISTICAL SECTION OF THE BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

By **Professor E. C. K. Gonner, M.A.**
(President of the Section).

The subject which I wish to discuss to-day has been determined for me by the circumstances of the present meeting of the British Association and by the trend of modern economic study and research. We are meeting for the first time here, gathered together from distant and diverse parts of the world, and in this section at any rate we shall be discussing problems similar in certain respects in our various countries but unlike in other respects owing to the differences between these countries. It is a fortunate circumstance, because it is largely by means of an interchange of views and experience acquired in such environments that true knowledge can be surely attained. On the other hand, it can be said, I think, without any exaggeration, that of the economic studies of the last 20 years none have been more fruitful in result than those which have dealt with economic development as it has taken place in the past, and as it is taking place in the present. Economic laws, which, after all, are but generalisations of the relations between different factors or of the relations which exist between certain causes and certain consequences, are studied increasingly in connection with particular periods, movements, and countries. New forces and new features present themselves, and with their introduction we perceive a change in results. This at once teaches the relativity of many economic maxims and statements and disproves the assumption, which at times some have been prone to make, that all nations and all countries undergo a uniform process of development, and respond in a uniform way to any given action or policy. It throws some light, too, upon the nature of these laws. Economic laws are not invalidated because conclusions alter as premises alter. But, on the other hand, such changes necessarily bring with them alterations in the rules laid down for practical guidance.

We come then to consider the particular economic features which characterise countries passing through the early stages of economic evolution during modern or recent times. Such countries, it need hardly be said, stand in a marked contrast to the older countries which surround and confront them, and which have all already passed into further and more advanced stages. They differ also in their economic circumstances—and this is what needs special emphasis—from those same countries when in the primary stage of growth in the past.

But to bring the matter within the limits of an address it is necessary at the very outset to define a little carefully the scope of the investigation. New countries differ greatly among themselves. Speaking broadly, they fall into three chief groups. There are tropical countries unfitted for white settlement and marked out by their characteristics for a very specialised development. Again, there are countries like some of the States of South America where, owing to particular features attending settlement, or to climatic and other causes, a growth at all comparable to that which has taken place in Western Europe is retarded if ever practicable. Lastly, we come to lands like Canada and Australia, and with these may be included the United States, where considerable similarity to the older countries exists alike in antecedents, circumstances, and prospects, though in each case there are undoubted and specific economic differences. I purpose, therefore, while not wholly excluding from our survey countries of the two former types, to direct your attention in the main to the last-mentioned type, in the hope that by an examination so defined, and a contrast of countries of this order with the old European nations, some light may be thrown on the causes underlying the more striking dissimilarities in development.

Before, however, the economic features and differences distinctive of new countries are dealt with, it may be well to say a word or two as to the general course of early economic growth in England and other European countries. Three features call for particular mention. In their early stages these latter countries were free from any continuous external contact and interference; their relations with each other and the outer world were slight, or at any rate not such as fundamentally to determine the direction and nature of their development; they had to meet their own wants and to do this by means of their own resources. Secondly, during this period the nation itself was composed of small and almost self-subsistent and self-contained groups. Lastly, economic methods, social ties, and intellectual attainments were on the same plane, being simple and, as we now should say, backward or primitive.

When we turn, however, to the position of new or young countries either at the present day or during recent years, we are met at once by features which stand out in significant contrast to those sketched above. Not only are such countries in the early period of evolution, but they are in continuous contact with other countries, and, moreover, with other countries which are in a very different stage of development. Again, they are young countries, in some instances inhabited largely or wholly by people, in other cases guided and controlled by leaders, modern in every respect and sharing to the

full in the science, knowledge, and ideas dominating the older countries. Furthermore, both their social and their political features are modern; on the one hand, these are not of the type which in the past were associated with the early stage of growth; on the other hand, the countries themselves are much less affected than are older countries at the present day by traditions and customs which, despite their origin in the circumstances of bygone days, still continue to influence the life of the present. In other words, they are less helped or less hindered by habits of long formation. But these somewhat general considerations are but preliminary to a closer and more careful analysis of the particular economic conditions which beset countries now in the early years of growth.

Firstly, such countries, even in the earliest stage, are unavoidably in close relations with countries which have attained a more elaborate growth and organisation: communication renders isolation impracticable, and every year the means of communication increase. It is a question, not of intentional interference, but of that inevitable influence which nations in close relations bring to bear upon each other. Nor is it a question of one-sided influence. Older nations have been and are affected in their economic policy and organisation by the discovery and opening up of new lands and by the events taking place in them. Still, it is probable that the influence of the older-established world is more powerful, so far at any rate as the direction of economic progress is concerned. Be this, however, as it may, it is this aspect which occupies our attention at the present moment. The effect is particularly apparent in trade and industry. Needs, in other words, are not dependent for their specific satisfaction on the internal resources and productive activities of the particular land, and this, while important in all instances, is of great moment in the case of a country which, as yet without opportunity to develop its powers, is seeking, as it were tentatively, the best lines of advance. It is peculiarly open to influences of this kind, because its organisation is not firmly established. When the social structure is less complete and the direction of development uncertain, the risk of future and permanent advantages being outweighed by present gain is enhanced.

Secondly, in the opening up of resources, the former dependence on the internal powers of the country has been essentially modified. Both capital and labour can be obtained from outside. This, of course, quickens development; but at the same time it may affect its direction. Certainly it introduces many fresh problems; and sometimes these are very difficult problems. Taken as a whole, it leads to a very rapid or sudden development, an aspect of peculiar importance where what we call native races are concerned. Quite apart from certain evils often associated with such alien intrusion or dominance, and apart too from the shock occasioned by the introduction of foreign standards and customs alongside of or in substitution for old usages, such people often have manifested an inability to stand the mere pace of modern progress. Even when we come to white races, the results of the rapid progress which occurs when natural resources are rich are open to adverse criticism. Again, it may lead to too great a concentration on particular methods of production and particular occupations, to the exclusion it may be of other methods and occupations which ultimately may be more advantageous. Again stable customs and social ties are more difficult to form when industrial development is hurried. In addition to these, other special difficulties manifest themselves in the respective cases of alien capital and alien labour in new countries. So far as capital is concerned, the case varies according as the introduction of those who control the employment of the capital, and so the industries in which such capital is used. Even when alone an interest on the part of the outside nations is often awakened which is not wholly healthy, extending sometimes to attempted political influence, though this, it should be said, is not of frequent occurrence except in the case of countries largely native or semi-native, or occupying a very backward position in the scale of civilisation. Sometimes, too, it may occasion the premature exhaustion of particular sources of wealth, or at any rate rather in the interests of foreign capitalists than of the inhabitants themselves. But in the case of the more backward countries, and especially of countries where climatic conditions preclude a white population occupied in manual work, it has usually meant the introduction of a class, controlling capital and organising industry, and yet entirely alien to the main body of inhabitants. Such a situation undoubtedly imposes a great responsibility on those in whose hands lies the social and political government of the country, a responsibility still greater when the organising class does not settle down, but comes and goes in a bewildering procession. British India and the Dutch Indies furnish illustrations; and, to some extent, the effect of such a tendency is to be perceived in certain parts of South America. Nor is the immigration of labour from other countries less complex or less potent in its results. Such labour comes from many sources and varies greatly in kind. A clear distinction, however, must be drawn between white labour not essentially different from the existing white popualtion and more or less skilled or otherwise adapted to good manual work, and, on the other hand labour of a lower type, often racially distinct, and in some cases brought in owing to its climatic suitability. So far as the former is concerned, immigration as a rule is attended with few difficulties other than those of a simple economic character and more or less temporary in their nature. A ready means of stimulating industrial development is provided, and the country is supplied with skilled adults without the cost of education and upbringing. But the results of immigration of the second type of labour are less simple. The general question of immigration, indeed, may be looked at from three points of view. From the aspect of economic employment, immigration often involves immediate competition

with the labour already in the country or coming forward with the normal increase in the population. But in a new and progressive country, with many openings for new developments such competition is seldom harmful. In the long run the labour creates its own field of employment and contributes towards the general progress. At times, it is true, the supply may be in excess of the demand, and any particular kind of labour may continue to stream in long after the need for it has ceased. But this can be remedied best by the wider diffusion of accurate knowledge as to the conditions and necessities of the place in question. Positive restriction, if attempted, may do harm by obstructing supplies of labour when needed in the future. When, however, economic standards of living are considered, the kind or type of labour in question is all-important. Ordinary white labour entering a country already peopled with white men offers little difficulty. But nearly all nations have encountered difficulties when any considerable immigration of labour occurs from countries where the standard of living is essentially and as it were, permanently lower, and these are rendered graver when accentuated by difference of race. In old and new countries alike the entry of a low type of foreign white labour may bring about a lowering of the general standard in certain industries or certain places, with harm, not necessarily limited to the district or employment in which it settles. Still, apart from the more general considerations of policy, interference would probably involve restriction of the more desirable type of labour already dealt with and thus be economically disadvantageous. The case of coloured labour is admittedly different even in this respect. Standards vary and the racial barrier seems to prevent their speedy adjustment. But the difficulties of the whole matter are shown more clearly if we turn to consider immigration in its relation to general social progress and political government. Here the main point is the possibility of assimilation. How far or how easily, it is asked, can such new elements be absorbed into the general life and made an integral part of a homogeneous population? Now, it is not my business to discuss the question in detail, still less to examine any particular policy which may be advocated or which may have been adopted. All that is necessary is to note this difficulty and to emphasise its existence in the case of new countries and especially of those countries or places where labour of this type is required or attracted by reason of climate or other causes. Two considerations may come into sharp conflict: on the one hand, the rapid production of wealth may be assisted; on the other hand, serious effects in respect of economic progress, nationality, and orderly growth may be experienced.

In no country, it should be added, has the question of the supply of labour from outside played a more important part in economic history than in Australia. During the early period not only was it one of the influences which tended to the continuance of the transportation system, but it was, if not the chief, one of the two chief factors in the policy of colonisation and settlement devised and advocated by that very distinguished man, Edward Gibbon Wakefield. In more recent years it has been associated with State assistance, and also with forms of indentured labour. And it remains one of the problems before the country.

Thirdly, modern methods and modern science are applied to production even in its early phases, to agriculture and the extractive industries as well as in trade and manufacture. The consequences are both many and great. Rapid and sudden growth is rendered possible, but this, as already indicated, results in consequences not always or wholly advantageous. Such efforts are the more evident when the natural resources of the country are rich. Furthermore, when such occurs there is an invariable tendency to substitute large-scale systems of production for the small-scale systems characteristic of production in the past when in an early stage, and this is not without significance both economic and political. No doubt this is of greater moment when a development of this order takes place in a land peopled by native races, who are forced, as it were, into a system wholly alien to their social surroundings, and one which they fail to understand. There is a disastrous incongruity between their method of employment and their social environment. Though of less it is still of some importance when the population itself is modern in civilisation and outlook. To some extent, but only partially, they inherit from their ancestors in other lands the lessons slowly acquired in the time of small industry and occupation. On the other hand, there can be no doubt that the more rapid progress due to the reasons given, accompanied as it is by greater vicissitudes, offers a more general opportunity of success to those willing to work hard than is possible in other countries. Rapid progress always tends towards this end, and it does so the more especially when the organisation is more flexible and less marked by custom. Not only is the field itself wider, but the changes in the field are more frequent.

The difference in economic development, thus briefly depicted, implies, it must be remembered, a somewhat parallel difference in administrative and political life. If we take such a country as England, small-scale production was part and parcel of a system in which small local communities grew up practically self-contained and self-governed. Thus the strength of the Government rested largely on local administration which made its influence felt in the general and central administration. But in a young country developing under modern conditions the system of local administration is consciously devised. It rather derives its existence from the central Government than furnishes the material out of which this latter is gradually evolved.

Fourthly, a modern new country has before it the example of older countries which, after passing through the phase in which it is, have developed the more complex economic system towards which it is tending. Their conditions and institutions record

the results of forces which, though nascent in it, are yet in operation. It may have something to imitate, it certainly will see much to avoid. This is true from many points of view. It is true in a technical sense. Everyone knows the importance of ruthlessly scrapping plant; but there are parts of the national plant, as it were, which cannot be scrapped. Though neither the English railways nor the English canals if laid out anew would be constructed on their present lines, they are too elaborate and costly to be destroyed and reconstructed. It is equally, if not more, true when we consider the industrial system in its more general aspects. In this instance we know that Germany, to take an instance, enjoyed one advantage because her development followed, and was not, contemporary with, industrial development in England. Perhaps it is truest of all in respect of the social consequences of industrial development. Take, for example, the large cities and manufacturing districts in the old countries with all their social problems; housing, sanitary, and social. A country in the early strages is in this truly advantageous position that action in its case means prevision and not reform. Hence the crucial importance at the present time, in such a country as this, of the Town Planning movement. Again, there has occurred, in those lands in which manufacture has made its greatest strides, a gradual exodus from the rural districts, partly no doubt because of the larger wages to be obtained in the towns and industrial districts, but partly owing to a past, if not present, disregard of agricultural interests, and to the comparative lack of attraction in the country. It may be looking ahead to suggest that such may affect a country like Australia, but time brings many changes. In any case the time to provide against a movement such as this is not when it has acquired force, but when agriculture is prosperous, and before town life has begun to exert its curious lure on the population.

Fifthly, older nations became critical and self-conscious at a comparatively late stage in their history; that is, after customs had been formed and structure had lost its former flexibility. In such cases remedial movements and changes, however wisely initiated, encounter a natural and quite comprehensible conservative opposition. Whatever their possible gain, in the progress towards this destruction is involved. Nor is it incorrect to conclude that in many instances the immediate and certain losses rightly outweigh the problematic if ultimate advantages. Far otherwise is the case in a new country where the period of self-consciousness begins with the early days of growth, and conscious action towards a given goal has an easier path and suffers less from the knowledge that it must destroy in order to achieve. Even if social experiments fail, in such countries they cost less than they would in countries more stable and more firmly based in habit and tradition. Of course, there is loss as well as gain in this. In the one type of country there is greater stability, in the other greater confidence or courage in novel directions.

Lastly, and following to some measure on what has just been said, we have to take into account the smaller part played by social conventions in the economic life of new countries. In older countries, primary development took place under conditions as to social life and order not due wholly to economic causes, but often arising from reasons which existed outside that domain. Social position, accepted without question, and forces like caste, rather indicated what various classes were to do than grow out of the necessities or nature of their respective occupations. No doubt some correspondence was required, since regulations unsuited to progress led to the supersession of the races less apt to meet the needs of the time, and so the usages which survived bore the stamp of economic fitness. Still, in the main, economic activities rather followed than created class divisions. But the economic situation changed, and thus in later years we have the curious spectacle of distinctions which have survived from the past and with time lost much of their meaning, lingering on side by side with class distinctions resting wholly on economic success. In a new country not only are traditions weaker, but from the beginning economic success plays a larger part. Thus, social prejudices as to the standing or respectability of varying occupations are less strong. Again, owing in part to circumstances of this order, work of some kind is to a larger extent the normal lot of all, a feature which cannot but play a great part in the development of the country. The existence of even a small idle class is anomalous. On the other hand, there is the inevitable drawback that material success, or, to put the matter bluntly, wealth, has less to counterbalance it than in lands where traditional position still holds a place. It is quite true that in England the same or a like tendency has been marked in recent years. No doubt, too, this danger, and it is a very real danger, is best met by the erection of finer ideals and loftier standards of conduct and attainment than are furnished by considerations of birth and traditional position; but meantime, and pending their growth, the latter, at any rate in old countries, does something to lessen the importance and influence attached to wealth as a thing in itself. Even in new lands, such as the United States, and no doubt to some extent in Australia, they are not without a certain influence, but they are in an alien atmosphere. Hence the particular importance of the creation of a real standard of culture and personal excellence.

Hitherto it has been my task to state and describe the chief economic particulars with regard to which countries of various types differ. It is now necessary to examine these in other ways and especially as to the influence which taken together they exert upon the economic progress of what we have called new countries. To do this at all fruitfully necessitates their consideration with regard to three matters—namely, the direction of economic development, the industrial organisation, and, lastly, the national life and character.

The first question to put, then, is the special effect

of these factors upon the economic occupations and interests of such countries. The natural answer which will occur to any economist is that countries in close contact and engaged in trade tend to develop those industries and occupations in which, as compared with others, they enjoy special advantages or stand at the least disadvantage. Such a distinction or division of industries, of course, exists between foreign nations and is the basis of the theory of international trade. But in the case of young countries its features and consequences are accentuated and bear a particular significance: with them it means that almost inevitably and before manufactures have been initiated, let alone developed, they will enter upon a course complementary, as it were, to the occupations embraced in older countries and corresponding to the needs of such countries, the direction of their growth being determined by the interaction of external needs and their own natural wealth. This is in the main the so-called "infant industries" argument; but it is important to observe in detail the many causes which make up the strength of this when applied to the case of young industries in a new country. The circumstances of such countries usually offer peculiar advantages in some one or other branch of agriculture, sometimes, too, in mining. If the case of agriculture be taken, such countries possess, as compared with older countries, abundance of land in proportion to population, while in addition the soil is new and often rich. The truth of this may be seen by a reference to Australia, Canada, the United States, Chili, and the Argentine. In all these, the agricultural advantages, and in some those connected with mining, are great. Consequently foreign capital is attracted into these directions and suitable foreign labour is needed and obtained. Sometimes in the case of settlers the two come together. The great strength of agriculture in these instances lies in the application of modern scientific methods of farming and the use of machinery where land is plentiful. On the other hand, new countries are unfavourably situated for the prosecution of manufacture. Not only would they encounter the competition of manufactures already long established, highly organised, and victorious over the initial difficulties involved in such a development, but they are lacking in two great requisites. They lack a population trained to manufacture and with some degree of that acquired skill which is attained from an industrial environment. Further, manufactures depend to a great extent on the degree of general organisation in the country as a whole, which includes, not merely skill, but the development of those conditions and means which are necessary to highly skilled industries, providing it with ready carriage, organised markets, and credit. Such a system is only evolved slowly, and in its absence, or while it is weak, the struggle for success is necessarily severe. Under such circumstances the line of least resistance is obvious, and the forces of individual action and of competition drive a new country into this direction. At this date it is fortunately necessary to deal only with the normal forces which bring about what has been called a complementary development in new countries. Still, it must be remembered that from time to time suggestions have been made which are, to say the least, reminiscent of the ideas underlying the old "colonial system," which sought by political measures to compel colonies to develop along these lines, that is, so far as the circumstances of the time in respect of locomotion and carriage allowed.

The errors of the old "colonial" policy may seem evident to us, but if so, it is because they were emphasised in its disastrous consequences.

When scientific colonisation came into debate, with the nineteenth century, there was no thought of attempting any revival of the system just alluded to. On the contrary, one of the first subjects to attract attention was the possible undesirability of too one-sided a development. This was looking at the matter from the point of view of the new country itself. To some writers greater variety of occupation appeared advantageous, and with this end in view schemes were propounded for the establishment of town-settlements and other forms of industrial development.

Both old and new countries may be said to suffer under disadvantages in this respect, but the disadvantages point in different directions. The maintenance and extension of rural life is demanded in England, for instance, whereas in new lands the demand has been expressed for the encouragement of manufacture. Alike from the economic as from the more general point of view, the development side by side of activities so different in their direction, and so admirably fitted to supplement each other in their influence on national life, may seem desirable. In a community, as in an individual, many elements are required, and these, it may be contended, can be permanently secured only by a variety of occupations and interests. Though this is a matter for argument, here it is sufficient to observe that the question exists and that with it is raised the advisability or inadvisability of State action to prevent too great a concentration in one direction and to foster other occupations which, however great their success may be when well established, have little or no chance of surmounting the difficulties attending them in the earlier stages.

When we turn to industrial organisation and especially to the question of the relations of labour and capital, certain matters may be briefly mentioned and then dismissed. In some new countries foreign capitalistic interests predominate and introduce difficulties partly economic and partly political in character. Again, the entry of low-grade labour and particularly of coloured labour creates the peculiar dangers which attend a rigid and especially a racial separation between different economic classes. Here again the problems are partly economic and partly political. But these, though undoubtedly grave matters, are somewhat special and by no means universal in new countries. It is more important, then, to consider how far the general problem of the relations between capital and

labour is likely to be affected by the particular characteristics which have passed under review.

A greater emphasis on the rights and claims of labour is only to be expected, and is due to various causes. Certain of these are particularly important. There is a smaller body of labour in a position of personal dependence, a factor greatly accentuated by the opportunities of change which present themselves. So there is a greater independence of attitude. Again, work and economic occupation play a very large part in the general life of the country. When such is the case, public attention, and so general interest, are attracted to the conditions and the remuneration of labour. This attitude should be carefully distinguished from that due to the human sympathies awakened by the spectacle of distress and misery. It shows itself less in attempts to alleviate personal suffering and more in the determination to secure for labour what is considered to be its rightful position. Justice rather than mercy is its characteristic. On the other side there is no great mass of inherited traditions. It was explained before that social or class traditions are derived, at any rate in part, from a time when position was due less to economic reasons than to causes inherent in the structure of society. These remain on in a changed environment, with the result that certain grades in the economic hierarchy tend to become the partial monopoly of particular classes. Hence a separation and a tacit opposition between certain classes with their economic development and other classes. Countries which have escaped the earlier stage are less affected by considerations of this kind. Furthermore, the present industrial condition of older nations is not without effect as an example. The public evils of low-paid labour brought up in bad surroundings are an illustration of what is to be avoided. It is correctly seen that it is easier to anticipate such consequences by avoiding the conditions which lead to them than to remedy them when produced.

There is another circumstance which, though by no means universal in new countries, tends in the same direction. The effect of different systems of land-ownership and occupation upon the position of labour calls for attention in countries of all descriptions. Speaking generally, it may be said that free access to the land and the existence of small ownership, or to a less degree of other means of small cultivation, add to the freedom and increase the independence of those employed, not only on the land but in all occupations. In this respect there is no doubt much difference between countries of the kind under discussion. Still, on the whole, the greater abundance of land as compared with population and the recentness of land legislation offer in such countries a wider and a better alternative to industrial and other wage-paid employments than exists in several of the older and more settled nations, and hence increases the independence of the classes concerned.

On the other hand, certain of the circumstances which give strength to this movement on the part of labour affect in a marked way its nature and its course. Better opportunity and less rigid separation between industrial classes will bring with them in the long run a sound appreciation of the many and various features which combine in economic development. The tardy rise into prominence and power of the labour movement at a late date in the development of old nations involves one very real danger which new countries have, at any rate, the opportunity of escaping. With the existence of a marked separation between the various industrial classes, attended as that is by features of distress and less relieved than in new countries by equality of opportunity, it is difficult to secure an equable and unembittered consideration of the economic importance either of capital or of the skill which directs, controls, ventures, and organises. The hardships and inequalities obvious in the system, when coupled with the long existence and apparent permanence of the industries, lead not unnaturally to an under-estimate of these as factors and to a keen feeling that the one thing necessary is a new distribution of the national wealth. In these respects new countries have initial advantages. Their greater vigour begets a pride in the progress of the community and in the industries and occupations which embody and signalise that progress; while more widespread opportunity, and the sense of being at the beginning of things, should make them conscious that it is their task to devise a system both equable and commercially progressive. Still it is one thing to have an opportunity and another to utilise it well.

There are, it is true, certain circumstances which for a time may obscure or even hold in abeyance this very necessary endeavour. When rich resources are being rapidly opened up and when prosperous undertakings press one upon another, people are too busy and too well-off to pay attention to economic problems, despite the future importance of their solution. The return to the various factors, both capital and labour, is nigh, and there is little complaint as to lack of opportunity. It is largely due to this that, even amongst new countries, the part played by the forces of labour, and the claims made on its behalf, vary so much. Again, no doubt, the political machinery has a great influence. A country where the professional politician rules, or where the caucus exerts its sway, is little likely to develop a sane and well-timed industrial policy.

The effect of economic conditions on national life and standards is a subject which merits much attention, but here I must confine myself to distinguishing certain results or particular economic features which characterise one type of country. Some of these, indeed, despite their importance, must be treated very briefly. Thus, for instance, the effect of a rather one-sided economic development, already treated of in another connection, has a bearing on the present matter. Again, the difficulties which some new countries have experienced, in respect of the immigration of a particular type of labour, are undoubtedly attended by social and

political risks. No nation can view with equanimity the steady increase of an element in the population which stands out apart and distinct from the nation and can neither assimilate national characteristics nor be absorbed into the national life. Remedy may be difficult, but such a situation is undoubtedly disquieting. But if we leave these, as matters already dealt with, there are four matters which call for attention. In the first place, the circumstances of a new country, if that country be at all prosperous, naturally engender self-reliance and vigour. The openness of outlook, and the obviousness of the progress achieved, make for assurance and hopefulness. Even if vicissitudes be frequent, and men lose as well as gain and fall as well as rise, we only come to Adam Smith's position when he attributed the stimulating effect of great prizes in any occupation or calling to the innate sanguineness of human nature, which leads each man to believe in his own prospects of success, whatever may be the fate of average mankind. And where the examples of success are many, this individual hopefulness is much strengthened. So, too, the greater diffusion of opportunity plays a part. What is characteristic of the individual is characteristic of the race. Of course, there are some new countries where a lack of rich resources precludes any such feeling, and in any country there must occur from time to time periods of depression, perhaps the more acute because of their vivid contrast with the sanguine past. But, taken as a whole, undoubtedly in new countries, where development is in actual progress, there is greater vigour, greater assurance, perhaps greater self-assertion, than in other lands where development has gone further and where the prospect lying before the race as well as the individual is bounded by what seems to be a nearer and a more defined horizon. In the second place, as work is the common lot, there is less division between calling and calling and more tendency to judge a man by what he has done in his occupation, whatever that may be. A factor like this is far-reaching in its influence and reveals itself in many directions. It makes for solidarity, as well by creating a community of interest as by destroying prejudices. It furnishes a common test whereby pretensions and claims for consideration can be tried; and, though the measure may be imperfect, the test of actuality, after all, has the merit of being definite. In the third place, in such communities material things and material interests necessarily loom large. This points to a weak feature in this phase of development which is emphasised by the circumstances of a country striving to make good its place amongst older nations. The very pressure of their demands and their competition add to its prominence. Success means material prosperity. There can be little doubt that this is one of the dangers against which a community of this type has to strive. Such a country is, by the very nature of things, face to face with material difficulties and its victory rests on material achievements. Even the democratic test, alluded to above, of actual work and achievement operates in the same direction. In the last place, the very freedom from class prejudice is in part due to a general absence of custom and tradition which has an unfavourable as well as a favourable side. From a social point of view, custom is an invaluable tie, welding into union a large body of individuals with every variety of aim and very different views and opinions. It gives a permanence and stability to social life. No doubt, each country has to form its own habits, but till these are formed the social structure is weak. As an illustration, a comparison may be made between legislation in a new country and in an old country. In the latter, legislation is largely a gradual development of custom, and as a consequence the course of legislation is slow, often injuriously slow; the delay in some cases being due to an unfair regard for vested rights; but the main reason is the latent dislike to any violent breach with the past and to departures from custom. On the other hand, legislation in a new country is much more conscious. Not only are there fewer customary bonds, but there is less regard for those which there are. I do not wish to pronounce any opinion as to the net advantages of one method or the other. The point to be emphasised is the existence of a difference in this as in many other respects.

To what, it may be asked, does the examination summarised under the foregoing headings point? In the first place it gives some grounds for and explains the nature of public action as it has manifested itself in these countries. Now, an active state policy in social and economic matters may be due to many reasons. It may arise from an imperfect individual development, or, again, from what seems at first sight nearly the same thing but is really quite different—the existence of a highly organised and peculiarly efficient bureaucracy. But neither of these is true of the principal countries under consideration; in the United States, Canada, and Australasia, individuality is a very vital force, and the tendency of government cannot be termed unduly bureaucratic. The latter point may be illustrated by a comparison with modern Germany, which has been influenced so greatly by the system of bureaucratic administration built up by Stein and his successors. Of course, good officials can always achieve a great deal, but it is one thing to use officials and the official system of instruments to give effect to a policy, and another to take a policy from them. It must not be supposed, however, that democratic countries are altogether free from this latter danger. They are liable to it, unless means be adopted to keep the people as a whole in immediate contact with problems of government and to give them opportunities of co-operating in some way or other in public administration. But to return to the main point. State activity in these countries seems to me due to quite other causes on the one hand, the occasions for it are more numerous and the opportunities for it great; on the other hand, not only is there a natural predisposition in its favour, but many of the objections present in older countries are absent. But both these matters require explanation. With regard to the oc-

casions for state action, economists, differ though they may on the question of its abstract desirability, will agree, I imagine, that in proportion as these are multiplied the tendency towards such action will increase. If we turn to what has already been said, it is clear beyond doubt that an unusual opening for such action is afforded in the circumstances enumerated. Thus the case of young industries in a new country has been admitted fairly generally to afford an argument for protection specifically different from those adduced in other instances. It is not merely the case of young industries, but, to repeat my words, of young industries in a new country. Again, the regulation of immigration is presented in a very particular form. Whatever may be thought of any particular policy of restriction—and everyone is aware that there are many and varying considerations to take into account—a country deriving a large part of its labour-supply from outside will naturally claim to exercise a supervision over the nature of that supply not less than it exerts by education and other means over the labour supplied and trained within its confines. Again, in a country developing its resources and its latent natural wealth, and under considerable and inevitable pressure to move rapidly, a large field for State action opens out. But in addition state action in the circumstances of a new country is advantageously placed, inasmuch as it takes place early, when there is little to upset, and when action of any kind and by any body is most likely to achieve really tangible results. In other words, not only are the occasions many, but the opportunity for effective action is favourable. Furthermore, the exploitation of resources, hitherto untouched, by modern and scientific methods puts a powerful instrument at the disposal of the Government which was wholly wanting in former days, while, on the other hand, the knowledge of the results which have ensued in other lands from uncontrolled individual competition indicates the direction which action should take. To this are due the attempts made in some, at least, of these countries to regulate the relations of capital and labour. Certainly, in matters of this kind, those communities have initial advantages, when measures are undertaken in a comparatively early stage of growth—before, that is, industries have assumed the intricate form usual in old lands. Nor does this exhaust the situation. A new country is inclined to novel methods of action, as is shown by the general favour with which fresh expedients are received. While a tendency like this is due in part to the innate vigour of the people themselves, there are other causes which lend it strength: in the present instance, there is, on the one hand, the feeling that they can afford the experiment; on the other, the resolve to avoid, though the cost may be considerable and the risk great, the difficulties and dangers with which older nations are confronted. Even if the whole course is not clear, they would fain steer clear of the rocks and shoals which are charted.

Influences like these imply experimental legislation. Now, in a sense, most economic legislation is experimental; unforeseen results occur, and alteration, amendment, or repeal is required; but the extent to which it is experimental is certainly greater when we turn from the record of the past to the recent efforts of new communities. Reasons for this have been adduced, which may be briefly summarised, though in a somewhat different form. As compared with contemporary nations of a more complex type, new nations are more prone to engage in experimental legislation for three reasons: firstly, because things are simpler, and in a less highly organised society there is less prospect of interfering with a system which after all works, even if not to complete satisfaction; secondly, the consciousness of latent resources creates a greater readiness to take risks, owing to the general feeling that they can be afforded; and lastly, it is recognised that industrial civilisation carries in its train certain dangers which can be more easily anticipated than remedied. The case is a little different when the comparison is instituted with countries in the primary phase of economic life in the more remote past. Here the predominant reasons are also three. There is greater self-consciousness accompanied by a knowledge of possibilities and risks. Again, in the modern country, law is to a greater extent a conscious act and to a less extent a crystallisation of custom. Lastly, the movement of economic life and the greater rapidity of progress make other and further changes sometimes actually necessary and always less an occasion for hesitation or anxiety.

Still, a people encountering changes so rapid and sudden, and engaged in legislation experimental to such an extent, should look carefully to their armoury. Action or legislation in the economic and industrial domain, to be sound and effective, must observe certain conditions. The action of the State varies in its consequences with the relations between the people and the Government. A State which imposes law or exercises control as it were from the outside, acting autocratically or without any real identification of the private with the public will, encounters certain dangers. The essence of law lies in its ready acceptance, and this is peculiarly true of laws in the economic sphere which touch the social and home life and activities of the people. Now, any real feeling of community of interest between the people and the executive implies much more than mere popular election on however democratic a basis. It means a sense of participation in the acts of the executive, and involves a recognition of obligations as well as rights. To some extent, no doubt, this is furnished by high ideals in public life, but probably its surest basis lies in the participation by individuals in some form of public administrative action. The saying that the strength of England lay in its local institutions means even more than was intended at the time. Voluntary service in local government is to be valued not only for what it achieves, but because it quickens the interest in the State, and, if widely shared in, begets in the community an enlightened knowledge of the problems and methods of government. Again, State action, to reap a fruitful harvest, must be based on

knowledge; and here I touch on a topic which deserves more time than is at my disposal—namely, the importance in such countries of economic study and the methods which this should follow. It is precisely amidst surroundings where the mass of new data is great that the need is greatest for scientific method in the examination of such data and in their comparison with the phenomena existing in other countries. Economic theory and systematic economics form part, but only part, of the necessary equipment of the modern economist, and their function is not infrequently misunderstood, and stands in need of clear definition. They indicate the relations which, so far as our present knowledge goes, exist between different classes of phenomena, and especially between these in respect of cause and effect. They place at the disposal of the student a keen instrument and a means of fine analysis which enable him to classify and co-ordinate new data, to compare these with other data, and to avoid the fallacies and misconceptions which beset the path and invalidate the conclusions of the untrained observer. But much more is needed than these. To a knowledge of abstract things must be added acquaintance not only with economic history but also with economic phenomena as they exist and arise in the present. These furnish what may be called the content of the study of economics, and it is these which the economist has to examine and analyse. To some extent the new knowledge thus registered may modify previous generalisations. The practical bearing of such study on the problems of government and State action is obvious. But, quite apart from this immediate importance, it is a matter for regret that in a country like Australia, where there is so much economic material, comparatively little as yet has been done to treat it scientifically, and so to add to the body of organised economic knowledge.

I will take one instance. It is common knowledge that the labour legislation of Australia and New Zealand differs greatly from that attempted not only in old-established countries but in any of the other so-called new countries. We want a really scientific examination of the causes which are responsible for this difference. It is easy to make certain suggestions. Something may be due to the fact that the economic growth in Australasia is even more recent than that of Canada and the United States. Again, the manufacturing development is less advanced, and so the capitalistic element which finds its surest footing in the industrial domain is less powerful. Again, the contact with the organised industrial system of the older world is different in character from that which occurs in the case of the other countries mentioned above. Moreover, the early history of Australia encouraged reliance upon the State. But suggestions like these, and others might be added to them, need careful investigation and detailed inquiry before they can be accepted as an adequate explanation of this problem; and such an investigation should be undertaken in Australia.

Hitherto I have dealt chiefly with the explanation which the previous examination of the special features apparent in new countries affords of the nature of State action in such lands.

I would turn now to an equally important question—what guidance, if any, is afforded as to particular defects which require attention or particular impulses and forces which stand in need of special encouragement? Incidentally something has been said about certain of them. The comparative weakness of custom and traditions, in one way an advantage, is from another point of view a disadvantage. The dominance of customs is harmful, not because they are customs, but because old customs are often wrong or at least inapplicable to new conditions. But custom lies at the basis of the social fabric and enables a common consciousness as to right and wrong and a community of feeling and thought which are all-important in organised social life. It is possible that State action, if widely participated in and sympathised with by the people at large, may strengthen the social tie. Again, the importance of local public work by all members of the community has been emphasised: it cannot be too strongly emphasised. The besetting temptation of prosperity, and particularly of prosperity as it appears in a new country, displays itself in too great a concentration on material wealth and too exclusive a reference of everything to a material standard. It may be said that the same tendency manifests itself in the older world. That is true. On the other hand, not only are the economic circumstances fostering it much less dominant and pervading, but the social order and traditions which survive from the past provide at any rate partial corrective. As has been said before, while there is much to criticise in the notion of an aristocracy by birth or of traditional and professional standing such distinctions counteract the influence of mere material achievement as the test of success, and indicate a vague belief, however misplaced, in some immaterial standard which at least has the merit of implying obligations as well as rights. But on what can a new country rely? On the one hand, on the recognition of the sheer excellence of manhood and character quite apart from material results; on the other hand, on a belief in education and knowledge in the wider and higher sense. This lends a peculiar importance to the encouragement of science and the development of educational ideals in a new country.

In the survey just attempted certain causes have stood out so prominently and are so influential in their results as to demand a few words of comment. Foremost among these is contact between nations in differing stages of development. So much has been said of the economic aspects of this as it occurs between two particular types of countries that any summary would entail repetition, and repetition would be tiresome. But the subject might well be treated in much greater detail and with reference to nations and people of more kinds than these, and to the more general social and political features and results. No modern country, and in particular no

new country, can escape the influence of external factors controlling or deflecting or retarding the course of its orderly evolution. These forces operate under different conditions, and the consequences which ensue vary greatly. Sometimes nations standing at almost opposite extremes are brought into close relations. The matter is further complicated when political relations exist between the countries in question. To deal much further with this matter is hardly possible at the present time. Still, two things should be added. On the one hand, nations exercising political control over other countries and races, and particularly over countries and races less advanced in general civilisation and often marked off from them by racial characteristics, bear a heavy burden of responsibility. The very relationship stimulates growth in the subject people, and yet it may well be that such growth may be so premature and so out of congruity with essential conditions as to call for measures which may retard rather than encourage it. On the other hand, it is the duty of the historian, and particularly of the historian who is an economist also, to disentangle the various influences interacting, co-operating, or conflicting in the evolution of the social and economic life of a country, and to make due allowance for forces which work obscurely and in a very subtle way. Secondly, the effects of sheer rapidity in growth must not be overlooked. The application of modern and more scientific methods to rich latent resources is sure to operate in this direction, and it may be assisted by other causes. Certain consequences are almost inevitable. Not only is the national spirit and type affected, particularly in the economic aspect, but with the denial of the time requisite for the orderly and stable evolution of custom a great call is made on the innate qualities of the race concerned if true progress is to be achieved and its fruits secured. Lastly, to a nation in the early stages of development, the spectacle and record of the experiences of other nations which have trodden the like paths, though under other conditions, mean a great deal. There is much to imitate as well as much to avoid, and, what is still more important, there is much to learn.

But while I say this, I would not have you think that an old country has little to learn from those which are younger. It is true that it cannot retrace its steps, and that the opportunity furnished is different in character. Still, as an economist from the older country, I would say that we expect to gain much for our guidance from the bold attempts made on this side to grapple with problems many of which, though differing in their setting, are the same in essence as those which meet us at home. Neither on one side nor the other is it a question of mere imitation. Each country has its own destiny to fulfil and must traverse its own course. The experience of others exhibits the connection between cause and effect, and those profit the most from example who discriminate wisely and best adapt its teaching to their particular conditions.

British Association for the Advancement of Science.

SECTION OF ECONOMIC SCIENCE AND STATISTICS.

(By our Special Correspondent.)

Friday, August 14, 1914.

Town Planning.

A most interesting discussion took place on the subject of town planning. Mr. W. R. Davidge (Lecturer to the British Town Planning Association) illustrated his opening paper on "Town Planning in relation to the Community" by excellent lantern slides, showing the plans of Canberra, Melbourne, Berlin, Stuttgart, Ulm, Mannheim, and other cities. These pictures demonstrated the manner in which transit and beauty had been provided for. In the course of his remarks he pointed out that the English Town Planning Act of 1909 had focussed public attention on the subject, but this Act had long been preceded by the Italian, Swedish, and Prussian Town Planning Acts, all of which not only provided for town extensions and new streets being laid out on the lines prescribed by the municipal authority, but also gave the authorities much greater powers of purchase or expropriation. In most cases different parts of a town require special treatment, and in German town planning practice it was customary to divide the town area into zones, each with special building regulations and restrictions as to height, number of stories, and open spaces. Even under the English Act factory zones or districts might be prescribed, from which all businesses likely to cause objection by reason of smoke or noise would be excluded. Such districts must, he said, necessarily be in close touch with railway or water transit, and if possible on the leeward side of the town; with the growing use of electric power, factories were becoming less objectionable, but it was still desirable to segregate them.

In practically all countries the constant increase in value of urban land had resulted in a corresponding increase in the height of buildings, which in turn had resulted in still further increase of value, the one reacting constantly on the other.

In England much was hoped from the limitation of houses per acre. The effect of such a limitation must be at least twofold: it tended first to spread the town and consequently the values over a larger area; and by restricting the use to which land is put, to that extent would decrease the value per acre of land which is already ripe for building. At the same time it would tend to give a corresponding increase of value to land farther from the town. Its effect on the already overbuilt city areas could not fail to be beneficial, for by fixing a standard for suburban development, a high standard of amenity and a low standard of price, it would be financially impracticable to force up values in the built-up areas above a reasonable limit, and economically impossible to increase unduly the congestion of building. A reasonable return was to be obtained from the land, but nothing whatever could be gained by overcrowding.

The municipal authorities could by careful planning of new main thoroughfares and prescribing adequate width between buildings, not only provide new traffic arteries at a minimum of cost to themselves and the present ratepayers, but save untold expenditure in future widenings and piecemeal improvements. To secure satisfactory results, however, in this, as in other urban, problems, it was essential that some one authority should have control of the general lines of the plan. In European countries there was a constant tendency to extend the boundaries of the municipalities, and such a tendency was but a natural outcome of the desire to avoid the repeated waste and overlapping of divergent controlling authorities.

With the growth of municipal services such as tramways, sewerage, water supply, gas, and electricity, the tendency towards centralisation of control tended to become more marked, and there was a greater effort towards the realisation of the possibilities and ideals of the town as a whole.

(Continued on page 280.)

Medical Journal of Australia.

SATURDAY, SEPTEMBER 19, 1914.

State Registration of Nurses.

The Victorian Parliament will in all probability be asked to consider a Bill for the State Registration of Nurses during the present session. The "Age" published in its issue of September 7, 1914, a strong article pleading for the passage of this measure, and adduced the usual arguments in its favour. The Royal Victorian Trained Nurses' Association are, so we are informed, desirous of seeing registration of nurses enforced, and their support should go a long way in stimulating the legislature to press this Bill through the two chambers. State registration has already been introduced in Queensland, and also in New Zealand. The strange thing is that the other States have allowed time to slip by without seizing the opportunity of protecting the public and the profession of nursing.

The history of the movement in favour of State control of nurses within the British Empire is a short one. In 1904, owing to a long continued demand for placing trained nurses in a class distinct from the untrained and wholly incompetent woman who calls herself nurse, a Select Committee of the House of Commons was appointed to enquire into the question and report. The report was issued on 25th July, 1905. The Committee recorded the fact that many divergent views had been expressed by the witnesses who gave evidence, but that there was an almost unanimous opinion that some change in the conditions under which nursing was carried on was demanded. Among the reasons put forward by a few persons was one that registration was required to check illegality, immorality and scandal, which was at that time existing, although undiscovered and unchecked. The Committee was unable to find reliable evidence of the existence of immorality, but agreed that registration would prove a means towards stopping some abuses. The Committee, after weighing the evidence, recommended the registration of individual nurses, the registration of training schools for nurses, and the licensing of nursing homes, institutions, and societies, which supply or employ nurses. They suggested that a Central Body should be set up for the purpose of keeping the register, and that that body should consist of matrons, nurses and representatives of the medical profession, of training schools for nurses, and of the public. As a result of this report, Mr. Munro-Ferguson introduced a "Nurses Registration Bill" into the House of Commons in 1906, but the Government was not favourable, and the Bill was successfully blocked. Opposition to the scheme took a tangible form, as was to be expected in an old and conservative country like England, where vested interests count for a great deal. The most powerful source of the opposition was the London Hospital. The idea was regarded by Lord Knutsford (then the Hon. Sydney Holland) as a menace to the high standing and popularity of the London Hospital Nursing Home, and his lead was strong enough to infect a large number of London Hospital nurses, who opposed the Bill, and took up a markedly reactionary position. The British Medical Association, led by Sir Arthur Horsley, urged the Government to adopt the measure, and in this they were well supported by the Society for the State Registration of Trained Nurses, the Royal British Nurses' Association, and the Queen Victoria's Jubilee Institute for Nurses. In 1908, Mr. Claude Hay introduced a Bill and Mr. Munro-Ferguson reintroduced his Bill. In the House of Lords, Lord Ampthill brought in a Bill for the registration of nurses, and Lord Balfour one for the institution of an official directory of nurses. In the following year a Bill was presented by Mr. Findlay, and one for Scotland by Mr. Cleland. Numerous deputations, including several from the British Medical Association, waited on the Prime Minister, urging on him to take up one or other of these measures in the name of the Government. In spite of the reappearance of these Bills each year, no progress has been made, and as far as England is concerned, the opposition to the measure has been successful up to the present in preventing fresh legislation. In Australia the matter is different, in so far as there are no ancient institutions with vested interests which would gain by the preservation of the status quo ante. The reasons in favour of State registration of

nurses are so obvious that they need scarcely be repeated in this place. The public has a right to know whether a nurse has served her three years in training, and has obtained her certificate at the termination of that period. No sufficient protection is ensured if the public has to rely on the bona fides of the woman claiming to have obtained her certificate at a given training school. In the next place, legislation is required to create uniformity of training and of examination, that is uniformity in regard to minimum requirements. Furthermore, the nurses form a profession which should be recognised as such by law, and to which certain privileges and protection should be accorded. In Mr. Munro-Ferguson's Bill it is proposed that a General Council be set up, consisting of three persons appointed by the Privy Council (of whom one at least should be a woman), one registered medical practitioner appointed by the Local Government Board, one appointed by the General Medical Congress, three appointed by the British Medical Association, and one appointed by the Medico-Psychological Association, and seven nurses elected as the direct representatives of registered nurses. The duties and powers of the Council should be to regulate the issue of certificates of registration and the conditions of admission to the register of nurses, to regulate the course of training and conduct of examinations, to regulate the admission to the register of persons already in practice as trained nurses at the commencement of the Act, to regulate, supervise and restrict within due limits the practice of registered nurses, and to define the particulars required to be given in any notice under the Act. Two registers are suggested, namely, a General Nurses' Register and a Mental Nurses' Register. The Bill has been drafted with much care, and has the entire approval of the British Medical Association. The provisions would only need slight modification to apply to the Australian conditions, and when so modified should meet with general approval in all the States.

TOWN PLANNING.

The most important event in the Section of Economic Science and Statistics of the British Association for the Advancement of Science was undoubtedly the discussion on Town Planning. Mr. Davidge is following up the advantages gained in the Commonwealth by the excellent speeches delivered in the Section by giving a course of lectures on the subject in various towns and cities. It may, perhaps, be said that little that is new transpired, but it should be recognized that things true bear repetition, and are more fruitful of good than things new, which are not invariably true. Certain lessons have to be driven home again and again, and one of these is the baneful effect of overcrowding on the physical and moral well-being of the people. A few years ago, Dr. Chalmers, the Medical Officer of Health of Glasgow, was able to show that the height, weight and nutrition of school children in Glasgow, taken at the average figure, were progressively greater in houses or dwellings with two and three rooms, than in single room tenements. The mortality was 33 per cent. in one-roomed tenements, 21 per cent. in two-roomed tenements, and 11 per cent. in three-roomed dwellings. Still more striking were his observations on the capability of learning of the children. He distinguished between "very good," "good," "moderately good," and "blunted." Of the children living in one room, 6.6 per cent. were classified as "very good," while the three first classes together only embraced about 60 per cent. of the children. The positions were markedly better in children living in two rooms, and in regard to those whose homes had three or more rooms, only 5.2 per cent. were "blunted," while close on half were "good." These figures are of greater value than the figures of mortality in Garden Cities. Given a new movement, a comparatively small population, and certainly a more or less chosen population, and the result within the first ten years would invariably be a low death-rate. Moreover, it is so obvious that a Garden City with suitably constructed houses and plenty of air and sunlight, must be more healthy than slums that no statistics are required. But the tendency of to-day is always to increase the size of towns and cities, and the result of this urban attraction is necessarily an increase in ground values and in the price of building material. As the land becomes more expensive, the land owner is tempted to build in as much as pos-

sible, and to accommodate the greatest number of persons to the acre. Cheap tram and rail transit, no doubt, enables the manual worker to live without the city confines, but the advantage is at times merely a temporary one, for the price of suburban building land rises with the demand. One of the most urgent problems in every country with which the legislator and sociologist has to deal is the housing problem, and there can be no doubt that the Garden City scheme, with its attractive planning and pleasant architecture, must take a fair share in all extension of modern towns. In connection with this, the scheme of co-partnership in housing has attracted a great deal of attention in England, and deserved careful consideration in this country. The underlying idea is to form a company with capital raised in shares of £1 to £10, payable in full or in instalments. Loan stock takes the form of preference capital. The capital of the company is utilized in the erection of substantially-built houses without overcrowding. These houses are let to the shareholder at ordinary rentals. A dividend of 5 per cent. is paid on the capital, and 4 per cent. on the loan stock. The surplus, after providing for expenses, repairs and sinking fund, is divided among the tenant shareholders in proportion to the rents paid by them. This scheme is not merely an economic problem enabling the wage-earner to buy his house without a reserve of capital. It is a hygienic problem, since it places a healthy home within the reach of practically every manual worker. The subject of town and village planning has become actual within our shores, and it will be found advisable if those taking up this problem will give the practical scheme of the co-partnership movement full consideration.

ANTI-TYPHOID VACCINATION.

It is with great satisfaction that we are able to announce that the practitioners of an important country town of New South Wales have decided to offer free anti-typhoid inoculation to all their patients. They have determined to use all means to induce them to avail themselves of this means of protection. One afternoon each week will be devoted to the work. The local Municipal Council is being urged to support the endeavours of the practitioners by providing accommodation, and by bringing the matter to the notice of the public. The beginning having thus been made, it is anticipated that the movement will spread throughout all the areas of the State in which enteric fever is endemic. Medical practitioners in these districts are urged to give it their best attention. (See "Medical Journal of Australia," Sept. 5, 1914, p. 233 and p. 238.)

THE PRICE OF PATRIOTISM.

The news of the first engagement of the Australian Forces, which was published in the press on Saturday, September 12, 1914, brought home to the whole of the Commonwealth the real meaning of war. But a few weeks ago, Australia felt justly proud of the fine physique and excellent bearing of her young sons who had voluntarily taken up the sword in the defence of the Empire. Those whose entire energy is taken up by the preservation of health, and with the improvement of the physical conditions of the race, cannot regard with equanimity the loss of men, who from a eugenic point of view appeared to be destined to become the fathers of a robust and healthy generation. The sacrifice, no doubt, has to be made, and the nation owes a debt of gratitude to the six brave men who lost their lives during the operations of the occupation of New Britain by the Australian troops. The medical profession has sustained an especial loss in the death of Captain Pockley, who, in accompanying the force in the humane capacity of a field surgeon, was prepared to risk his life in the attempt to bring aid to those who were sick or wounded. It is the fortune of war that combatants and non-combatants may fall under the enemies' fire. Up to the present no information is obtainable in regard to the losses sustained by the medical profession in the European fields of battle. The numbers of killed and wounded as reported in the daily press have been so enormous that considerable losses among the Army Medical Corps must be expected. At a later date we shall doubtless learn much of the activities in the field and in hospital of the military surgeons, and through them we may expect to obtain the most vivid accounts of the gruesome horrors of war.

MEDICAL EXAMINATIONS IN PARIS.

The syllabus for the first year's examination in the faculty of medicine at the Paris University has recently undergone considerable modification. As a result of the changes, a large proportion of the candidates were referred back for varying periods. The students were greatly dismayed at the results, and a deputation from "l'Association corporative des etudiants en medicine" waited on Professor Landouzy, the Dean of the Faculty of Medicine, for the purpose of laying their grievances before him. They pointed out that the examinations were held under totally new conditions, and that in fairness to the men, a year's notice should be given before applying the new syllabus. In his reply, Professor Landouzy promised to enquire into the matter, and admitted that the story told him was a very sad one indeed. He advised the delegates to calm their troubled comrades, and to assure them that the black outlook was not likely to prove a lasting one.

Abstracts from Current Medical Literature.

MEDICINE.

(117) Syphilis of the Liver and Banti's Disease.

Osler (Clinical Journal, July, 1914) describes three cases of this nature. He states that the distinguishing features of Banti's disease are: (1) Progressive enlargement of the spleen, lasting for many years, and not necessarily impairing the health; (2) anæmia of a secondary type, with leucopenia, which may come on acutely, and recur at intervals; (3) a final stage with jaundice, cirrhosis of the liver and ascites. From this condition certain other affections have been gradually separated off, namely, splenomegaly with acholuric jaundice, splenomegaly of the Gaucher type, splenomegaly with primary pyelothrombosis and certain forms of tropical enlargement of the spleen. To these he adds splenomegaly, associated with chronic infectious endocarditis, which is necessarily rare, and ordinary cirrhosis of the liver, occurring in connection with marked increase in the size of the spleen. He gives the histories of three cases of syphilis simulating Banti's disease. The first, a girl, exhibited anæmia, enlargement of the liver and spleen, with ascites, and indications of marked portal obstruction. The red cell count shortly before death was 2,234,000. The necropsy revealed a spleen weighing 1510 grm.; the liver was very tough, and divided into nodular masses, and intersected by broad bands of fibrous tissue, whilst numerous gummata were present. There was a large quantity of blood-stained fluid in the peritoneal cavity, and the mesenteric glands were enlarged.

The second case was one of acquired syphilis, with an enlarged irregular spleen, a blood-count of 1,400,000 red cells ,and 7500 leucocytes per c.mm. The spleen extended below the navel, and the liver formed an irregular mass in the right hypochondrium.

The third patient was a boy of 11, who had been under observation for four years at the time of his decease. The syphilitic nature of the disease was not recognised for some years, till he developed a specific arthritis, with nodes on the shin-bones. The spleen was large, smooth and painless to the touch, the liver large and irregular; ascites was present, and during his last illness profuse hæmatemesis occurred. The necropsy showed (1) the usual features of anæmia; (2) œsophageal varices whence the bleeding had come; (3) a greatly enlarged spleen; (4) a syphilitic liver. The conclusions to be drawn from these cases, in Osler's opinion, is that syphilis of the liver may present a picture closely resembling Banti's disease, the splenomegaly, anæmia and hæmatemesis completely overshadowing the hepatic features.

(118) The Residuum Found in the Empty Stomach.

Harmer and Dodd (Archiv. Int. Med. Nov., 1913) have shown by X-ray studies that the ordinary stomach tube has a tendency to curl up in the stomach. The fluid which is really present in that organ may therefore not be recoverable by the rubber tube. Rehfuss and Bergeim (Journ. Amer. Med. Assoc., July 4th, 1914) have used a modified stomach tube of their own to examine the residue found in the stomach of normal students. Their tube was furnished with a special heavy tip, slotted with large perforations, the diameter of each being equivalent to the maximum bore of the tubing (No. 8, French). This tube can be left in the stomach throughout the entire cycle of gastric digestion. Normal students were used as subjects. None of them showed any symptoms of gastro-intestinal troubles, and they were examined at 8 a.m. before they had taken any food. It was found that the new tube was successful in recovering much larger amounts of fluid than could be got with the ordinary stomach tube. The residuum in every case exceeded the accepted normal limit of 20 c.c., and in several instances was above 100 c.c. without there being any evidence of gastro-intestinal or general disorders. The acidity content was high, and about half of the residues contained bile. A few vegetable fibres but no meat fibres were found. The accepted limit of the normal residuum of the "empty" stomach as 20 c.c. is thus shown not to be correct, and the significance of a considerable residuum in relation to the diagnosis of ulcer must be seriously questioned.

(119) The Blood Pressure in Pneumonia.

Newburgh and Minot (Archives. Int. Medicine, July, 1914) discuss this subject at some length, and after a careful investigation, state that they are unable to agree with G. A. Gibson's well-known statement that "a pressure appreciably below the normal in pneumonia is invariably of evil omen. . . . When the arterial pressure in mm. of Hg. does not fall below the pulse rate expressed in beats per minutes, the fact may be taken as of excellent augury, while the converse is equally true." Their conclusions are as follows: (1) The blood-pressure curve does not suggest that there is a failure of the vaso-motor centre in pneumonia. (2) Low systolic pressures are not "invariably of evil omen." (3) The systolic pressure in those fatal cases tends to be higher than it is in the recoveries. (4) Blood-pressure measurement in pneumonia cannot be used as a basis for treatment. (5) Prognostic inferences based on the relation of the level of the systolic pressure curve to the pulse curve (Gibson's rule) are wrong more often than they are right in this series. (6) The rate of the pulse and not the level of the pressure is the chief factor in deciding whether the pressure will fall below the pulse.

(120) Transitory Heart Block in Acute Rheumatism.

Rontier (Archiv. des Maladies du Cœur, des Vaisseaux and du Sang, May, 1914) records a case in which heart block was recognised as the earliest sign of an attack of acute rheumatism. The patient, a woman of 31 years, was admitted into hospital, complaining of sore throat, headache, vomiting and diarrhœa. There had been faintness and palpitation of the heart for some days, and two attacks of complete loss of consciousness. The only previous illnesses were diphtheria at 15, and rheumatism at 30. The temperature was 102°, and no joint affection was discovered or complained of. Examination was completely negative, except for the fever and the heart block; a trace of albumen was present in the urine, but the serum failed to agglutinate typhoid or paratyphoid. Large waves in the jugular vein attracted attention, and the curves showed complete heart block, with an auricular rate of 117 and a ventricular rate of 63. The latter rate is high for complete heart block, but would be regarded as being very low for a temperature of 102° C. Amyl nitrite increased the speed of both auricle and ventricle, but did not affect the block. Atropine was administered on the fifth day after admission, and removed the block for a time, but the a-c interval even under its influence was greater than normal. On the sixth day the block was partial, on the seventh day it had disappeared altogether, and typical articular rheumatism of the right wrist appeared, the left hand and left foot being affected later. During all this time the temperature remained between 100° and 102°. Six days later the temperature was normal, and the patient was well a few days after this. She returned later to hospital, with another rheumatic attack, but no cardiac affection. The interest of this case lies in the facts that the heart was affected before the joints in an adult, and that the conducting apparatus was the first part to show affection, while the valves were not affected at all. Under full atropine action the a-c interval remained increased so that the bundle muscle was probably affected. The affection was very transitory, showing that it was due merely to an inflammatory reaction. It is interesting to note that the ventricular rate was high during the period of complete heart block, though, in view of the raised temperature, the auricular rate was not so. No drugs were given till the sixth day, so that it is possible that the high ventricular rate was due to sympathetic nerve action. The author also reports a case of broncho-pneumonia, with transient 3-2 heart block, which cleared up rapidly. He suggests that such cases are probably more com-

mon than is usually recognised. The heart-block is frequently overlooked in these cases.

NEUROLOGY.

(121) Intra-Meningeal Treatment of Tabes and Cerebro-Spinal Syphilis.

Boggs and Snowden (Archiv. Int. Med., June, 1914) have varied the usual technique of intra-meningeal injection of salvarsan by using undiluted serum in large quantities (25-35 cc.). They obtain the serum in the ordinary way from blood drawn one hour after intravenous injection of 0.6 gm. of salvarsan. After the injection of the serum all pillows were removed from the under the patient's head, the foot of the bed was elevated, and the patient kept on his back for at least an hour. The injections were repeated every seven to twenty days, according to the severity of the reaction. All the patients treated in this way were relieved of pain. A definite slow improvement in locomotion was noted; the gait at times became almost normal. The psychic effect of the treatment was marked, the patients being stimulated to help themselves, and to carry out the necessary movements of re-education. In a few cases the immediate improvement was such that the patient left the hospital, and could not be induced to continue the treatment. In regard to the effect on the cerebro-spinal fluid, the cell count quickly dropped to normal, and the Wassermann reaction was rendered negative in many cases after several injections. The globulin reaction, however, remained strongly positive, owing, it was suggested, to the fact that large amounts of globulin were injected in the serum. In favourable cases the patients were able to follow their usual occupations after 18-72 hours. The reactions were more severe than when diluted serum was used. They consisted of pain in the abdomen, legs and rectum, and occasionaly nausea, vomiting and giddiness; more rarely fever was noted.

(122) Functional Activity in the Etiology of Nervous Diseases.

Johnson (Quarterly Journal of Medicine, July, 1914) points out that Edinger, as a result of his study of nervous diseases, has long since expressed the opinion that symptoms are, in large part, exhaustion phenomena, and that they are closely associated with the nature of the patient's activities. Johnson states that a discussion of the etiology of nervous diseases usually gives the greatest prominence to "selective action" of poisons, and then attention is turned to hereditary instability of the nervous system, trauma, mental stress and strain, chill, and lowered resistance. He considers that another most important factor, namely, functional activity, is often overlooked. He gives a number of illustrations of this, and comes to the following conclusions: (1) That a poison which circulates through the body, though it may show some particular selective action for various parts, does not cause sufficient damage of itself to produce symptoms. These symptoms only occur through the agency of another factor—functional activity—and, failing the presence of this additional factor, the patient may never develop any definite disease, although his general power of activity may be considerably lessened. Thus, only a small percentage of patients with syphilis develop symptoms of tabes and general paralysis. These symptoms do not appear, as a rule, until several years (ten or more) after the primary infection. This is in marked contrast to true cerebro-spinal syphilis, which tends to occur in as many months. The same wide difference is shown in the results of treatment of the two conditions. Anti-syphilitic treatment in tabes and general paralysis causes little, if any, improvement. (2) That inquiry into individual cases shows that there is close association between a patient's symptoms and the nature of his activities; and that the various poisons, although widely different in nature, tend to produce clinical conditions closely approaching each other. As examples, the toxins of syphilis, alcohol, and lead have been quoted as producing respectively (a) tabes, tabo-paresis, and general paralysis; (b) alcoholic neuritis, Korsakow's syndrome, and alcoholic dementia; (c) lead neuritis, dementia, and a combination of both conditions. Further, both alcohol and lead produce weakness of the extensors of the forearm (so-called selection of the musculo-spiral nerve), while sparing the supinator longus. Other muscles supplied by the median and ulnar nerves are at time affected, and it is therefore quite impossible to explain this as a selection action, different muscles being affected in different patients. (3) The nervous system in these forms of chronic toxæmia must be regarded as subnormal, owing to the presence of the poison. The individual has become a potential patient; symptoms will develop in the part exhausted when he is subjected to exacting conditions. The multiplicity of symptoms occurring in such conditions as tabes or alcoholism thus becomes more intelligible. (4) That it seems possible that a patient's mode of life and particular form of activity may be just as important in the determination of his symptoms, as in the Darwinian theory, similar conditions are in the production of "special characters." The influence which this should have on treatment is apparent. In nervous diseases more than in any other condition, prophylaxis holds out the most promising outlook, as the presence of symptoms in a patient is actual evidence of irreparable destruction of nervous structures. Realising this, the early diagnosis of (a) hereditary subnormal conditions, (b) tabes dorsalis, or (c) any of the forms of toxic neuritis becomes extremely important, in order that the patient may be removed from such conditions, which, if persisted in, would inevitably produce symptoms. In addition the question of originating new lines of treatment is opened up, based on the recognition of the evil results which functional activity in a subnormal structure will produce.

(123) The Organic Nature of Chorea.

Hertz (Review of Neurology and Psychiatry, June, 1914) states that the evidence of chorea being an organic disease rests less upon symptoms of the disease itself than upon its association with rheumatic fever and its obvious organic complications, such as endocarditis and pericarditis. The symptoms of chorea would not by themselves indicate the presence of organic changes in the brain and spinal cord. The anatomical lesions discovered in fatal cases are slight and inconstant. He points out that the optic discs are never affected, and the pupils are normal; the cutaneous and deep reflexes are neither increased nor diminished; and the plantar reflexes are always flexor. The author draws attention to the diagnostic value of the sign described by Babinski as "combined movement of the trunk and pelvis," and which Hertz calls Babinski's second sign. When a normal individual, lying on his back with his arms folded and his legs widely separated, attempts to sit up, both legs rise equally in the air; on falling back to the ground, the legs again rise. In organic hemiplegia the affected leg always rises higher than the other, whereas in hysterical hemiplegia the paralysed leg remains flat on the ground, although several muscles are brought into powerful action when this occurs. The author has tested this sign in seven cases of hemichorea. The leg on the affected side rose higher than the other in each case, although the plantar reflexes were flexor, and the cutaneous reflexes and tendon responses on the two sides were equal. As this sign has never been observed in any case of non-organic hemiplegia, its constant presence in hemichorea points strongly to the conclusion that the upper motor neurone is affected by some organic change, even if it is of a kind which escapes recognition by the ordinary methods of histological examination. As Babinski's second sign is constantly present in hemichorea, it may reasonably be concluded that the lesion with which it is associated is constantly present in ordinary cases of bilateral chorea. As this sign is the only evidence of the existence of an organic lesion in hemichorea, and as it depends on a comparison between the two sides, direct evidence of the organic nature of the nervous symtoms in ordinary chorea is still wanting.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

(Continued from page 274.)

In a plan for town extension nothing could safely be left out. Railways were as much a vital part of the plan as roads, and the position of railway stations and goods yards as important or more important than the location of shops and traffic centres. In many towns the whole development was throttled and contorted by one or more huge railway embankments laid down without regard to the growth of the town. In Germany, although railways were as autocratic as elsewhere, the need was frequently felt for revising the position of the railway stations and even the line of the railway itself, and instances of this description of complete removal of the railway had been carried out in numerous cases in connection with schemes of town extension (Frankfurt, Wiesbaden, Düsseldorf, Lübeck).

All classes of traffic—railways, electric railways, light railways, tramways, motor and heavy goods traffic had their proper functions, and must have their place in the town plan. The combination of light railway and tramway (Städtebahn) so much used of recent years in Germany was full of possibilities, and the flexibility of the modern motor omnibus traffic must also be carefully considered.

In laying down the lines of new streets some form of classification of roads was desirable. In London a standard minimum of forty feet wide had been adopted. In Australasia the minimum was 66 feet, but any such arbitrary standard must of necessity have serious limitations, and in many cases involve heavy and unnecessary expenditure, both in construction and maintenance, to say nothing of dust and other inconveniences.

The classification of roads into arterial roads, secondary roads, and residential roads was commonly practised in Germany and other European countries, and nowhere better than in Germany could the disadvantages of excessive road widths be seen.

Garden City and Garden Suburb schemes had seized upon this possibility of economising, and in such places as Hampstead and Letchworth the residential roadways were not metalled to a greater width than 16 feet, though the distance between the houses was maintained at 60 feet or more, this leaving room for forecourt gardens or grass margins.

In all problems of town-development and the settlement of new towns the availability of land was of supreme importance. The questions of land values, land ownership, and land transfer were fundamentally bound up with town planning, housing, and improvement schemes.

No municipal authority could be expected to carry out any great scheme of improvement if there were no possibility of recoupment from the owners whose property had been improved. So long ago as 1666, in the rebuilding of London after the Great Fire, provision was made for "betterment" charges on the owners of the property improved; and, in default of municipal ownership, some such system of recoupment was unavoidable.

In many American towns such as Kansas City, "special assessments" for the acquisition of parks and similar purposes were in force and appeared to be favourably received.

Speculation in land was much encouraged by the facility with which land transfers can be effected, and the effect of over-speculation from this cause was apparent both in Germany and in Australasia. The effect produced was a forced and unnatural increase of prices of land until the curious fact was seen that land in Berlin was valued at three or four times the value of similar land in London, and, partly in consequence, nearly one-half of the population of Berlin lived in one-roomed dwellings in tall tenements crowded round one or more internal courts.

Methods of taxation, too, must be considered in this regard. An annual site tax on capital value led undoubtedly to the use of land, at any rate to the extent necessary to defray the amount of the tax. In urban areas this meant that fewer private open spaces would remain; in suburban areas the tendency was to put up any sort of structure that would act as a "taxpayer." The results in either case must be unsatisfactory, in the absence of any proper town planning scheme, defining the use to which any particular land was to be put in the general interests of the community.

The relative uses of leasehold and freehold systems of ownership had been much discussed. Leaseholds enabled land to be acquired cheaply with the minimum of capital, and also had the advantage on the lease falling in of a considerable amount of property being under one control, thus enabling comprehensive improvements to be carried out, as in the case of the South London property owned by H.M. the King, the leases of which had recently fallen in, and the property had been largely reconstructed.

In German towns the municipality generally owned from one-third to one-half of the whole available building land, thus to some extent controlling speculation, and at the same time enabling the municipality to take the benefit of any improvement created by them. The great value of this method, however, lay in the control which it was possible for the municipality to obtain over the extension of their town. Individual freeholds, without some power of purchase or compulsory re-distribution as in the "Lex Adickes," would continually conflict with the interests of the community. In large estates in one ownership as at Letchworth and Hampstead, excellent results had been obtained by central control, which gave benefit to the community and security to the individual.

General Conclusions.—Town planning powers would be of immense advantage to Australasia, but the special conditions called for special treatment and the provisions of any town planning legislation must be adapted and not merely copied from European precedents. The town planning authority should in any case possess free access to all land within its area, powers to preserve amenities, powers to reduce constructional expenses by classification of roads according to their uses, powers to vary constructional by-laws, and powers to regulate the character and description of buildings and the broad lines of architectural design.

Mr. J. S. Nettleford (London) was unable to attend the meeting, owing to illness. The following paper was read by Mr. H Meredith in his absence:—

The object of town planning is to provide decent housing accommodation for the people at reasonable rents, and this requires not an art of town planning, but a science, which must lay its foundations not in architecture but in economics.

The art of town planning is no new invention of the present age, for we possess records of cities which were built according to purposed design, and there are innumerable remains amongst the ancient cities of the world which point conclusively to noble architectural conception and the most magnificent town planning. There was incontestably much splendid design in the mediæval cities of Europe, and much of their achievement surpasses anything the modern world can show in architectural grouping. This art of town planning, whether practised consciously or otherwise, does not meet the changed conditions of the present day, which must be taken into account in the building and development of the modern city, and for which not only an art, but a science of town planning is necessary.

These changed conditions are many, but it is only necessary to touch here on one or two salient points. In the first place, the town is no longer built for purposes of defence. This immediately affects the site chosen; it obviates the necessity for a containing wall, and, above all things, it enormously increases the amount of land that can be used. In the second place, our views as to hygiene have undergone a radical change. Water was always recognised as a prime necessity for an important town, though it was seldom that a mediæval town enjoyed what we should consider a pure water supply. Drainage took an important part in the town's requirements during the last century, and quite lately it is coming to be recognised that light and air space are essentials to the health of an urban population. The much larger numbers with which modern society has to deal make this consideration of deep seriousness, because a cramped urban population means eventually a stunted and sickly people.

It is to meet these new needs that a new science of practical town planning is being evolved, and until this is un-

derstood and carried out, we shall not get any improvement for the general mass. We want a general move up from the bottom. No merely beautiful town planning will answer this purpose. Grandiose buildings and streets, costly architectural features, impressive squares, attractive vistas—these may make a handsome quarter, but do not house "the people," although the cost must come out of the people's pence. It is true such town planning meets æsthetic requirements and ensures light and air to the quarter, but the question is, at what cost, and where do the people themselves live? How can they afford these wide fronts, these handsome streets, these open squares, when the average worker's weekly rent is 6s. 6d., and this is often a quarter of his wages? It is a mistake to think that beauty cannot be obtained without a large expenditure of money. Public buildings are obviously needed, and these should be suitably grouped, but great care must be taken not to spend more money than the community to be provided for can afford. Financial disaster must result where civic centres are planned in excess of the needs and the means of the people.

For the purposes of public health there must be plenty of space between the houses. It is far cheaper to provide this at the backs of the houses, where no expenditure has been incurred on roadmaking, etc. Open spaces on back land are far more useful to the people than excessively wide roads or ornamental squares.

On public roads very pleasant effects can be obtained by the judicious arrangement of blocks of houses and some attention to colour. Slight architectural deviations are useful, and then the gardener must finish the work. Simplicitiy is the truest form of art, or, in other words, natural beauty is far more pleasing to the eye than artificial extravagance, and incidentally is much cheaper—a vital point in the housing of the poorest classes.

Unless town planning is founded on a sound economic basis, it cannot be anything but a failure. The economics of the question lie at the base of the matter, and the problem to be solved is how to make the sort of town and estate development that is required show a reasonable return to those undertaking it, and at the same time make the old, unhealthy, unseemly methods also unprofitable.

There is a tendency to think that in order to ensure hygiene and attractive town and estate development it is only necessary to make a town planning scheme enacting that the laws of health and beauty shall be observed. The problem is not so simple as that, and such a view can only result at most in the erection of a few model villages. Unless town planning schemes show a reasonable return for land and building developers, they will merely serve the purpose of a rich man's hobby, instead of raising the living conditions of the general body of the workers.

What is now so urgently needed is decent housing for the poorer classes at rents they can afford. The provision of such housing is the first duty of all modern communities, and nations who neglect it cannot fail to risk ultimate failure through the dwindling stamina of their people.

A solution of a problem of such complexity can only be obtained after careful study of the economic conditions governing the provision and development of housing; in the long run it is found that housing is provided neither by the State nor by the municipality, but by the ordinary business operations of private individuals, though these may be directed, guided, and helped by the State or the municipality. The landowner and the builder provide the great bulk of our housing, and economic conditions must be such that it pays them to produce the desired article; otherwise the public will demand it in vain.

If any general improvement is to be ensured, we must give to the individuals carrying out the work a strong economic incentive in the right direction. Why do our suburbs suffer from the monotonous rows of narrow-fronted houses, each with a long projection at the back, preventing the easy access of light and air, when a wider fronted house would be so much more hygienic, and have some individuality of its own? The builder does not choose this plan from caprice, but because a wide frontage is too expensive to pay him. The problem here is—and a very difficult one—to reduce the prohibitive cost of frontage.

Gymnasia and drill halls are expensive to build. Why are there no open spaces for drill or playing fields in large cities? It is true that front land is very expensive, but why does nobody think of putting these on back land? Before expenditure has been incurred for development back land is cheap.

Why do builders crowd so many houses to the acre? Because they have to recoup themselves for the price of the land and the cost of development. Why is land so expensive? Chiefly because public bodies do nothing to encourage building development on land that is still cheap. There is always cheap land near large towns, but no means of getting to it. Public bodies run no trams, hence builders can only use land where the price has risen. Wide paved roads, double sewers, expensive kerbs and channels, cause the high cost of development. Is so much macadam and paving really necessary in workmen's dwelling quarters? Would not equal width of light and air space, with more grass and less paving meet the purpose at less cost, and be more pleasant to the senses into the bargain?

It is too often forgotten by town planners that a very large proportion of our town population consists of people of very small means, and this must ever be so. No possible rise in wages can seriously alter this state of affairs. The first necessity to public health is an adequate supply of light and air to every dwelling house, and this can obviously only be provided by insisting upon more open development. More open development cannot be provided on a sound economic basis unless the cost of building land per acre is reduced.

It is sometimes asserted that fewer houses per acre will result in higher house rents, and unless steps are taken to increase the supply of land available for building, and at the same time protect cheap land from an excessive rise in value, this will be the case; but the English Housing and Town Planning, etc., Act, 1909, has provided means for overcoming this difficulty by enabling local authorities to restrict building density without being called upon to pay compensation to landowners in respect thereof.

The more intensively land is used, the more valuable it becomes. The more valuable it is, the more must the builder put on it in order to make his undertaking pay. Conversely, the few houses allowed per acre, the lower the value of the land.

Careful inquiries in several towns of Great Britain have elicited the fact that a 6s. 6d. house (including rates) carries a ground rent of 1s. per week, no matter whether there be ten, twenty, forty or more houses or tenements per acre. The capital value of 1s. per week is within a few shillings of £60. At 55 houses per acre this gives a total value of ground rents per acre of £3300; at 40 houses per acre it is £2400, and at 10 it is £600. In German working class districts, where the people live in tenement buildings five or more storeys high, the value of ground rents per acre varies from £5000 to £15,000 per acre, and the people are far worse off than in England. House rents are higher, and the accommodation not nearly so good as in England, where development is more open. It is instructive to note that in the small town of Teltow, near Berlin, when it seemed probable that only detached and semi-detached houses of not more than two storeys in height would be allowed, instead of the ordinary five-storeyed tenements, the prices of shares in companies owning land there fell at once 37 per cent.

Under the old system, land that might be used for building lies idle for 20, 30, or more years, bringing no appreciable income to its owner, with compound interest accruing all the time. Under the new system, where quick development is encouraged, and the economies in estate development that will be described presently are allowed, it is estimated that estates will be developed from 10 to 12 times as quickly as at present, that is to say, ground rents due to building will be obtained in place of merely agricultural rents many years earlier than under the old method.

To put it shortly—practical town planning means less per acre for the landowner, but he should sell or lease many more acres much more quickly, and it should cost him very much less per acre to develop his estate,

We must now consider the cost of building sites in detail. This cost is composed of:—

1. Interest on capital.
2. Price of land.
3. Cost of roadmaking, drainage, etc., generally described as cost of development.

1. **Interest on Capital.**—If we take what should be the foundation of all town planning schemes, that is, decent housing of the poorer classes at reasonable rents, we find that in England every 1 per cent. interest charged on capital represents about 1s. per week (including rates) on each small house. A plentiful supply of capital at a moderate rate of interest is therefore essential to the economic success of any town planning scheme. To obtain this cheap capital the land must be reasonable in price and development costs must be low, so that the commercial success of the undertaking is assured and the confidence of investors may be gained, even if the investor is the Government.

Under the old system land and building speculators have often made several hundred per cent. profit at the expense of the health and well-being of the nation, but it must not be forgotten that they ran a certain amount of risk. In order to obtain sufficient capital at a low rate of interest, the investment must be absolutely safe and sound.

Careful business men who wish to create ground rents in accordance with modern ideas should not pay for land, roadmaking and drainage, more than half the final value of the site they wish to develop. This means that if the developed land is worth £600 per gross acre, the builder should not have paid more than half this amount as purchase price and development cost; approximately £120 for the land and £180 for development. This gives a reasonable economic incentive for the creation of ground rents.

2. **Price of Land.**—Under the old method of town development, the supply of land available is severely restricted by the fact that roads, tramways, or motor 'buses are not provided until there is a sufficient population to make these services pay, and builders will naturally only build where communication is reasonably good. This state of affairs creates an artificial land monopoly, and results in prices being asked for building land that make town development on modern lines an economic impossibility.

There is also the fact, familiar to all observers, that whenever a tram or railway taps a new district, that neighbourhood is at once pounced upon by land and building speculators whose so-called improvements very soon spoil it. We are missing our opportunities. Quick and cheap means of communication invite the people back to the land, and we are, by our old-fashioned methods of town and estate development, only providing them with what will shortly become a fresh slum.

The only way to break the present land monopoly is to bring into the market cheaper land which is at present outside the ring, and provided the owners of this cheaper land are approached in time, it should not be difficult to persuade them to agree to a reasonable building density, because at 10 houses per gross acre they will get a very comfortable increment over the agricultural value of their land.

In the vicinity of all centres of population there is land which at present is of low value, due to lack of communication, but which could be brought within easy reach of the centre; and the procedure recommended is to—

1. Open up cheap agricultural land by means of new main arteries and other facilities for development.
2. Protect this cheap land from an excessive rise in price and a fictitious value by restricting building density.
3. Provide no facilities for development until the land has been protected.

(1) The old method of improving communication between the centres of population and their suburbs is to widen existing roads. This is extremely expensive. The ratepayers pay very large sums for existing frontages, and the landowner merely sets his frontage a little further back; he does not really give it up.

It is far more efficient and economical to provide access to cheap land by cutting new main arteries through back land. The advantages of this method are:—

(a) The landowner gains so much by getting his back land turned into front land that it is well worth his while to give all the land needed for the road; and, as a matter of fact, it costs him nothing to do so, because under town planning schemes, in reckoning the number of houses to be allowed, the road is counted in the area to be covered. It is also worth his while to contribute towards the cost of road making. Under the old system he would have had to cut his own road to develop his estate.
(b) Assessable value is increased.
(c) Ample room can be provided for all the traffic ever likely to use the road. This is nearly always economically impossible where old roads are widened.
(d) The road designer is able to follow the lie of the land, thereby getting much better gradients, and it is generally possible to find shorter routes.

The cutting of new main arteries through back land in advance is sometimes objected to on the ground that the ratepayers are called upon to spend money for the development of other people's property without any assurance that they will get a return on their money. If the work is done with judgment, the improved communication provided will soon produce the new assessable value needed to justify the expenditure, in addition to which a good deal of the expenditure will eventually be refunded by the landowner who benefits from it. Under the old method the ratepayers have to find all the money, and very often get no return whatever upon it.

The quicker returns obtained by landowners through the construction of these new main arteries in advance will recompense them for being satisfied with smaller profits, and if these new roads are made suitable for motor buses instead of tramcars, very heavy capital expenditure will be avoided.

Motor buses do not block other traffic as tramcars do, and, whereas tram lines are a great nuisance to other traffic, roads suitable for motor buses are a great advantage to other vehicles using the road.

(2) Under the old system of waiting till the price of land goes up before developing new districts, building land runs from £400 to £2000 per acre. This makes genuine town planning economically impossible. Purely agricultural land without buildings is seldom in itself worth more than £20 per acre. Those who develop building estates at the rate of 10 houses per gross acre can generally afford to pay about £120 per acre before anything has been spent on it. This leaves a very handsome profit for the landowner, and if, as should be the case, quick development is encouraged and assisted by the local authority, landowners will have every inducement to adopt the new methods.

There are, however, and probably always will be, many landowners who prefer to hold up land for big prices, and this is one of the main causes of urban congestion. It is true that the price of land is not the largest item in building schemes, but the high price of land makes it quite impossible for builders to allow sufficient open spaces.

The only way to give these people a sufficient economic incentive to develop their estates on modern lines is to rate land on the value put on it by its owner, and not merely on its present use. In England a very large number of town planning schemes are being seriously injured, and in some cases blocked altogether, by the exorbitant prices asked for land that is at present earning very little, and therefore contributing little to the rates. Many landowners do not mind foregoing the comfortable profit they would make on the development of their estates on genuine town planning lines, because they hope that by waiting they will get a very much larger profit. If land values were rated on a more equitable basis, they could not so easily afford to hold up land for exorbitant prices. Without a serious reform in this direction the progress of town planning on a sound economic basis will be very slow. Some town planners fear that the rating of land on its value instead of on its present use will encourage land sweating. This danger should be met by a general law restricting building to a reasonable density. If this is done the rating of land values will not injure town planning, it

will greatly expedite it, and in order to be fair to landowners, those responsible for assessing land must take full account of the reduction in land values due to the restriction of building density.

(3) Some reformers hope that:—

"Given adequate transit facilities, it should be possible to provide garden suburbs round every town." . . . In their opinion, "Cheap transit acts as a safety valve, and prevents the cost of land for residential purposes from rising above a certain point."

This hope is not founded on experience. Wherever transit facilities have been provided to new districts without first protecting the cheap land thereby opened up from overcrowding, the old congested development has always taken place.

It is essential to the economic success of town planning that no facilities for development, such as trams, sewers, etc., should be provided unless and until the cheap land opened up has been protected from excessive rises in land values by a reasonable restriction of building density, leaving the owners of cheap land a fair profit over agricultural value, and no more.

If owners of cheap land are approached on the subject of building density before they are given transit facilities, they will in most cases be satisfied with the handsome margin of profit between land at purely agricultural value and building land developed at 10 houses per gross acre; but if they are given development facilities before they have agreed to this open development, they will not unnaturally demand permission to put many more houses per acre than are consistent with public health, so as to increase their profits.

3. **Cost of Development.**—It is of no use providing a plentiful supply of cheap land unless the cost of town and estate development is seriously reduced. Necessities must be provided before luxuries are considered. Light and air are far more important to public health and well-being than magnificent architecture and extravagant engineering in the way of unnecessarily wide roads, double sewers, and extravagant kerbs and channels.

One of the main objectives of those primarily responsible for the English Housing and Town Planning, etc., Act, was to reduce the cost of town and estate development, and it is possible under rational town planning schemes to reduce this item by at least 50 per cent., but up to the present most of the schemes published have increased this charge instead of diminishing it, and unless town planners become more economical in their ideas, this new movement will result in worse living conditions for the great bulk of the population, owing to their not being able to afford the high rents due to extravagant development.

Any expenditure incurred on development is passed on to the tenants, from which it follows that extravagant development schemes must cause higher rents or greater building density. No business man will undertake the trouble and risk of estate development unless he is able to recoup himself for his expenditure and also make a profit.

It is not reasonable to reduce land values in order to make more open development sound business and then cause money to be spent unnecessarily on estate development. This is undoing the good previously done.

The beautiful city of Paris is a case in point. It is often mentioned as a splendid example of town planning, and so it is from the spectacular point of view, but from the economist's point of view it is most disappointing. The principal streets and boulevards are very wide and handsome, but when one examines closer (goes into the houses and looks at the backs), it is found that in very few instances is there a yard of land that has not at least one storey of building on it. The poorer classes are huddled together and piled on top of one another in a most unhealthy manner, and even those better off are often quite unable to obtain reasonable healthy and properly ventilated housing accommodation.

Berlin is another example of the disastrous economic effect of extravagant town planning. A large proportion of the population lives in tenements whose only ventilation is from a narrow well, four, five or more storeys deep. This is partly due to high land values, caused by allowing such intensive building, and partly due to extravagant development, which enormously increases the cost of building sites.

The chief items in the cost of town and estate development are: (a) Roads; (b) Drainage; (c) Open spaces.

(a) **Roads.**—Under the old system we often find deserts of macadam between long rows of small houses. These are dreary roads which have been made unnecessarily wide. In the preparation of town planning schemes great care must be taken not to provide a greater width of actual roadway than is absolutely necessary for the traffic it will have to accommodate. Under the old system side roads are very often wider than main arteries; this is obviously wrong. There must be sufficient distance between the buildings, but in side roads a 16ft. width of macadam is sufficient for all practical needs, and the remainder of the space should be taken up with gardens, tree-planted grass margins, and inexpensive pathways. These narrow roadways do not require nearly such expensive kerbs and channels as are now demanded under the by-laws. Kerbs and channels are a very expensive part of the by-law road. Hard brick kerbs and channels are quite adequate for purely residential districts, and are more pleasant in appearance than the granite setts now demanded, as well as being very much cheaper. The filling in of the space between buildings with gardens, grass margins, etc., is very much less expensive than the dreary deserts of macadam bounded by noble kerbs and channels and extravagant stone-flagged footpaths. Unnecessarily wide roadways only cause extra dust, which is now recognised to be most inimical to public health, whereas gardens and trees are beautiful to look at, and a source of health and recreation for the inhabitants.

To groups of small houses a light 8ft. macadam road with a circle at the end in which vehicles can be turned round is all that is required. The houses should be set well back from these drives, so that there may be sufficient air space, and this space should be taken up with gardens, which cost very little to lay out, and are of considerable economic and hygienic value to the tenants. Main arteries, on the other hand, should have in the first instance at least 24ft. width of macadam, and there must be plenty of space for a second roadway when it becomes necessary to divide the traffic, but even these new main arteries need not and should not be nearly so expensive as old-fashioned roads constructed under the by-laws.

The length of roadway is even more important than the width of carriage-way. In spreading our populations over larger areas, we must not forget the cost of public services, such as sewers, water mains, gas mains, and electric cables. The ordinary narrow-fronted by-law house is an abomination; but town planners must not go to the other extreme and give extravagant widths to houses. No road frontage should be wasted, it should all be used for buildings. Acute angles in road planning must be avoided. Where this precaution is neglected the cost of development will be increased, which means that rents must be higher, and the increased charge for interest and sinking fund on the greater length of mains and sewers arising out of careless planning will put up the rates. With careful planning the cost of development per house should be actually less than under the old congested method.

With tree-planted grass margins to main arteries and side roads towns can be made beautiful without using up costly frontage for open spaces.

(b) **Drainage.**—The best authorities (Royal Commission on Sewage, 1908) strongly recommended that there should be only one main sewer to take both surface water and sewage.

"The first flush of water from a surface water system during a storm is of such a foul nature that it ought to be purified, especially if the system brings water from paved open spaces, such as markets, squares, etc.

"With two sets of drains to each house there is danger of the sewage drain being connected with the surface water sewer, and slops and other filthy liquids are often emptied into street gulleys, and pass directly into the surface water sewer.

"The flushing of sewers by rain water is in itself useful.

"A separate system of double sewers costs about two-thirds more than the combined sewer, and entails greater expense in the erection of dwellings and other property. It also tends to engender a false security."

Another means of great economy possible in town planning roads is to locate sewers and drains under grass margins, not under the macadam. Where this is done much cheaper manholes can be used and the sewer itself less strongly constructed, because it has less weight to carry, in addition to which road users are not annoyed by the jolting that always occurs when passing over a manhole.

Under the old system it is usual to make a separate connection with the sewer for each small house. This is very expensive, and quite unnecessary. The proper plan is to gather up the drains of several houses and connect them by a common drain with the sewer.

(c) **Open Spaces.**—In the lay-out of small house estates the gardens to each house should not be made too large, because the average man will not cultivate a large garden, and as he cannot afford to pay someone to do it for him, large gardens to small houses will, many of them, become mere rubbish heaps. It is far better to arrange small gardens to each house and provide allotments for those who want them, and, will, therefore, cultivate them. These allotments earn some revenue.

By locating allotments, playgrounds and playing fields on back land where no money has been spent on development, very great economies can be effected, and the people get more benefit from the open spaces at the backs of their houses than they would do if these were located some distance away. The reduction in the cost of open spaces, owing to their having no cost of roads or sewers to bear, will enable land and building developers to provide more of them.

No town can be considered satisfactory that does not include within its borders a reasonable number of small holdings located on cheap land, which for various reasons, such as difficulty in sewering, will usually be available.

Public parks are still required in congested districts developed under the by-laws, but in town planning schemes a plentiful supply of small open spaces evenly distributed all over the area is much more useful to the people, as well as being much less expensive. In well-ordered town planning schemes large public parks are nothing but a luxury, and should not be arranged for unless given by some generous donor, who also provides for the upkeep.

To conclude. Extravagant development raises rents and makes decent living conditions economically impossible, except for a favoured few. It is in no way necessary to spend large sums of money in order to produce the City Beautiful. Harmony can be achieved without reckless expenditure, and there are many ways in which under town planning methods money can be saved instead of, as in the past, being wasted in ways that injure instead of improve a town or city.

The City Beautiful will be of no practical use unless it is also the City of Commonsense, providing healthy homes for all classes on a sound economic basis.

The next speaker was **Mr. James Johnston, J.P., C.E.** (Manchester), whose contribution to the discussion was the most interesting of all, from a medical point of view. He dealt chiefly with the hygienic aspect of the problem, and gave interesting instances of the association of bad housing with disease and degeneracy. He stated that the physical and moral health of the poorer classes lay at the very root of social and economic well-being. He quoted Dr. Arkle's Liverpool tables relating to the physique of school children of various levels of society:—

School.	At 7 yrs.		At 11 yrs.		At 14 yrs.	
	Ht. In.	Wt. Lbs.	Ht. In.	Wt. Lbs.	Ht. In.	Wt. Lbs.
Higher grade schools..	47.0	49.3	55.5	70.3	61.7	94.5
Council Schools—						
(a) Well-to-do	45.3	44.1	53.1	61.4	58.2	75.8
(b) Labouring Classes in constant employment	44.8	43.0	51.8	59.0	56.2	75.9
(c) Casual labour ..	44.0	43.0	49.7	55.5	55.2	71.1
Port Sunlight—						
Seven houses to acre	45.7	50.3	52.4	65.9	60.7	100.5

A boy of 11 years in the higher grade schools was practically as tall and as heavy as a boy of 14 years in type (c).

Town planning was necessary for the purposes of making a reasonable measure of health and happiness—of physical, mental, and moral health, and strength—possible in all parts of towns, of giving ready access from one district to another, under the supervision of the Local Authority, and for compelling the owners of lands to lay out and develop a district on uniform lines as distinct from each owner developing his own unit of land without regard to neighbouring estates; and not only must cities of the future be well laid out, but in the older and congested parts of our towns the slums must be cleared away and amenities provided. The Town Planning Act of 1909 gave Local Authorities power to provide open spaces and to limit the number of houses per acre, one of the best provisions in a somewhat cumbrous Act.

He spoke of the evil effect of overcrowding in many of the best planned towns, especially in Germany, where the people were crowded into tenement dwellings, entailing loss of physical and moral health, and economic loss.

The clearing away of slum property in the central area of our large towns was one of the most difficult problems to be faced, but it had to be dealt with drastically, as it was of equal or even greater importance than the laying out of new areas.

The cost was the great difficulty, and under the existing law it could only be dealt with by clearing away slum dwellings in districts declared to be unhealthy areas under the Public Health Acts, and building houses on the cleared sites for the people who had been dispossessed, or by declaring the houses, separately, unfit for habitation, and compelling the owners to close, put into habitable condition, or rebuild such worn-out houses.

The dominant difficulty in housing reform was the financial one, in providing the necessary minimum of quantity and quality for the accommodation of a worker's family, on account of the limited income of the badly paid workers, and their consequent inability to pay an economic rent. The real remedy would be to give adequate remuneration to the workers, as it was now generally accepted as ethically sound that the first charge on any industry should be an adequate wage for the worker, and the adoption of this principle would render unnecessary the payment of subsidies out of the public purse for housing purposes.

The method of building houses for the workers in the future was resolving itself into a Collectivist system, as the private builder had failed to meet the demand effectively. Houses built for the sake of profit-making entirely were generally inadequate, overcrowded, mean-looking in monotonous rows, and of inferior material and workmanship. This work must be undertaken mainly by Local Authorities and Public Utility Societies.

With facilities for obtaining money at cheap rates, a thorough organisation of the work, the more extended use of machinery, and the adoption of concrete as the principal building material, it would be possible to produce houses good in design, hygienic, and permanent to their construction, to let at an economic rent.

Dr. Russell (Glasgow) showed that 32 per cent. of ill babies dying in the first five years of life belonged to houses of one apartment and less, while 2 per cent. lived in five or more roomed houses, and that in Scottish towns the death-rate varied exactly with the number of one-roomed houses each contained. He contrasted Aberdeen with 13.6 per cent. of its population in one-roomed houses, and the lowest death-rate, and Glasgow with 24.7 per cent. in one room and the highest death-rate. The excessive death-rate, especially in regard to phthisis, is localised to those tenements of Glasgow in which people were warehoused at the rate of 500-800 to the acre. The high illegitimacy rate in Prussia, as contrasted with that in England, corresponded to the proportion of houses of less than three

rooms. He pointed out that 11,500 deaths from phthisis had taken place in 820 houses in the course of 11 years in the city of Paris, where the handsome boulevards and the huddling together of dwellings were in strange contrast. Other examples were given to show the association of overcrowding and high infantile mortality, rickets and anæmia.

The provision of healthy and adequate housing for the whole community was the main object of town planning. In 1898 Howard first advocated this in his "Garden Cities of To-morrow." In his scheme, Raymond Unwin so arranged the factories as to bring them into direct contact with the railway, thus eliminating cartage and its effect on roads.

The freehold was in the hands of the company, the number of houses per acre was limited to 12, and the dividend was not to exceed 5 per cent. He proceeded to show the effect of limiting the number of houses on mortality by means of the following table:—

	Death-rate per 1000.	Infantile Mortality per 1000.
England and Wales ..	13.3	95
Letchworth	6.1	50.6
Port Sunlight	7.46	81.39
Bourneville	5.7	62.4
Hampstead Garden (residential) Suburb	3.8	11.2
Burnley (industrial)	14.7	175
Staleybridge (industrial)	17	189

Horsfall's investigations of German methods had shown the influence of tenements in unduly inflating the price paid for land and vice versa. Of the two systems—housing or warehousing—independent homes or packed floor above floor—independent homes were unloubtedly the best.

He criticised the Town Planning Act, especially in regard to the delays created and the undue consideration given to the seller of land, and suggested that power be given to levy a rate on land values for local purposes. The value for rating purposes should be accepted as the price to be paid should the land be acquired for public use. The work in Manchester in removing slum conditions and its necessarily slow and expensive character was detailed. He considered that the owner of a diseased house was no more entitled to compensation for its abolition than a butcher for the destruction of diseased meat he exposed for sale.

Low wages and inability to pay an economic rent also influenced the question, and he considered that the real remedy for this was adequate remuneration, and that there should be a first charge on industry. A minimum living wage was, therefore, an essential. A diversion of a percentage of municipal profits for housing purposes, repairs, etc., was also desirable, and would be far superior to the present municipal borrowing methods. Cost of train travel should, however, be reduced, in order that people should be induced to live in suburbs.

Private enterprises with an eye to profits had not been a success. He was of opinion that local authorities, co-partnership tenants, etc., should take the matter up, in order that the best results might be obtained. Facilities for obtaining land and money at low rates and proper organisation were required. If this were achieved, and a free use of concrete were made, well-designed, hygienic and permanent houses would be produced. These could be let at economic rents, and would provide every class of the community with equal opportunity for the fullest development. The speaker emphasised again the main points brought out in the various papers, viz., foresight, health, and economy.

Wednesday, August 19th, 1914.

Statistical Tables.

The only paper bearing on medical science read before the Section was one by Mr. Charles H. Wickens, A.I.A. (Melbourne).

This paper comprised a brief review of the statistical data available for the construction of tables of natality, issue, and orphanhood treated as functions of the age of the father or of the mother. It also outlined the methods adopted and the results obtained in using for this purpose the Census results and the Vital Statistics for the Commonwealth of Australia.

The subject is one which possesses considerable interest from the standpoint of demographic statistics, and this interest is heightened by the fact that the results so derived are essential for the solution of some of the complex problems involved in the various schemes of social insurance which have been introduced or proposed in various parts of the world. Statistics of average surviving issue of dependent age are also of importance in questions relating to such economic matters as the fixing of a minimum wage.

In a report, furnished in 1911, on the actuarial basis of a scheme of National Insurance for the United Kingdom, two eminent British actuaries, Sir G. F. Hardy and Mr. F. B. Wyatt, estimated rates of natality as a function of the age of the father from statistics of orphanhood for the Dominion of New Zealand. These data were employed, owing to the absence at the time of any suitable statistics, for the United Kingdom.

The method employed in this case was the indirect one of estimating, from the number of children living at the deaths of fathers of various ages, the number of children who had been born of fathers of various ages.

A more suitable method is the computation of the rates from statistics showing the ages of fathers at the birth of their children. Such statistics are not available in the United Kingdom, but in Australia the requisite particulars have been recorded and tabulated for many years past, and it is a matter for some surprise that this source of information has not previously been tapped for the purpose in question.

Certain other experiences have been employed in this connection, the most recent being the 1911 Census data for Camberwell, England, employed by the National Insurance Actuarial Advisory Committee. In this case again the data for determining natality rates were not the ages of the fathers and mothers at the date of birth, but were the numbers of fathers and mothers of various ages who had living with them at the date of the Census children under the age of 12 months. From these latter data the rates of natality were determined by an indirect process.

Other experiences, referred to in the course of the paper, were that of the Hearts of Oak Benefit Society in respect of lying-in claims, the experience of the Commonwealth Public Service in respect of surviving children, a similar experience of the Public Service of New South Wales, and others.

The special tables contained in the paper have been compiled from:—

(i.) the Australian statistics of nuptial births according to the ages of the fathers for the four years 1909 to 1912;

(ii) the age results for the Australian Census of April 3, 1911;

(iii.) the mean population of Australia for the four years 1909 to 1912; and

(iv.) the rates of mortality for successive ages derived from the Australian experience for the ten years 1901 to 1910.

On the basis of these data, tables have been constructed, graduated and graphically represented showing:—

(i) the rates of nuptial natality for successive ages of males (natality table);

(ii.) the number of nuptial children at each age surviving to males of successive ages (issue table); and

(iii.) the number of nuptial children at each age rendered orphans by the deaths of fathers of successive ages (orphanhood tables).

In the case of (i.) the working process consisted of:—

(a) the tabulation and graphic graduation of the data relative to births and male population;

(b) the computation of the rates for each age; and

(c) the graphic graduation of the deduced rates.

In the case of (ii.) and (iii.) the process followed was that of the synthetic construction of issue and orphanhood tables. Given the number of births arising annually per 1000 adult males of each age, and given in addition the rate of mortality operating amongst adult males of each age and amongst children of each age, the computation of the numbers of children surviving are readily obtained, and

from these the numbers of children rendered orphans by the deaths of males of successive ages.

In the computation of the issue and orphanhood rates allowance had to be made for multiple births, statistics concerning which are also available for Australia in connection with the ages of the parents. These statistics indicate that the average number of children per birth increases with the age of the father, the rate of increase diminishing with age.

Reference was made in the paper to:—

(i.) the sources of material for the purpose of similar calculations in respect of females;

(ii.) to the allowances to be made in certain cases in respect of exnuptial children;

(iii.) to the allowances necessary in some cases in respect of still births.

It may be noted that in the publications dealing with vital statistics which are issued by the Commonwealth Statistician, the terms "nuptial" and "exnuptial" are used in relation to birth as more correctly representing the fact than the more usual terms "legitimate" and "illegitimate" This course was followed in the present paper.

Friday, August 21, 1914.

The Health Aspect of Town Planning.

Prof. Kircaldie read a paper by Dr. John Robertson (M.O.H., Birmingham), in the absence of the author. Dr. Robertson stated that town planning in England, as it was known at present, was originated to prevent the evils which had arisen in the larger towns due to crowding on space, and the baneful influences arising from permitting factories and works of all kinds being interlarded between dwelling-houses, in such a way as to make these dwellings dull and gloomy from the smoke-laden air, and dirty from the soot which gained access to the interiors. In most of these large English towns adequate space for the healthy recreation of the dwellers in the central areas was not provided, and in most instances no attention was paid to the amenities of the district, except in a few instances where great natural features existed.

It was very important that density of population should be limited to enable houses to be separated from each other: (1) to allow of sunlight gaining access to each inhabited room, (2) to permit of a current of air at all times round the house, (3) to allow of privacy in the dwelling without the necessity of covering windows completely with curtains, which had been proved to shut out up to ninety-seven per cent. of the actinic power of the sun.

Artisan areas arranged on town-planning lines were difficult to compare with good areas on old lines as regards their health statistics. If allowance were made for selection and class, there still remained so great a difference between the statistics of the new and the old conditions as to leave no doubt that in actual practice town planning was one of the greatest advances which have been made in recent times for the benefit of the public health.

British Medical Association News.

SCIENTIFIC.

A meeting of the Tasmanian Branch was held on Saturday, August 22, 1914, at the Royal Society's Rooms, Hobart, Dr. R. G. Scott, the Vice-President, in the chair.

Dr. George Wade (Lovett) read notes of a case of rodent ulcer which he had treated by simple excision. He referred to the pathology of the condition, remarking that although most pathologists were of opinion that rodent ulcer is an epithelioma, a true cancer, some other authorities—notably Prof. Welsh, of Sydney—describes the condition as an endothelioma. Sections of the tumour described by Dr. Wade showed no evidence of epitheliomatous action, and the neoplasm was distinct from the surface epithelium. The clinical picture of a rodent ulcer, he held, was quite distinct from a cancer. Local infiltration was very slow, recurrence rarely took place, and he had never seen metastatic infection. Referring to treatment he considered that in cases where the tumour was small and no bone infected, excision was the simplest, safest, and the best mode of treatment. In more advanced cases X-rays gave good results, but the best result undoubtedly could be had by radium.

The paper was favourably received, and at the close the chairman thanked Dr. Wade, remarking that the Branch was always pleased to hear the views of its country members.

A meeting of the South Australian Branch was held in the Lister Hall, Adelaide, on Thursday, August 26th, at 8 p.m., Dr. E. W. Morris (the President) in the chair.

Dr. R. Humphrey Marten discussed the case of a man, aged 46 years, from whom he had removed six inches of the ileum for a ring carcinoma. The interest of the case lay in the fact that only 3 per cent. of all primary intestinal growths occurred in this part of the canal. The proximal portion of the ileum was dilated to the size of an ordinary stomach, while the distal part was considerably atrophied. It was found necessary to close the two ends and to perform a lateral anastomisis. The symptoms were those of a pyloric obstruction, except that the attacks of vomiting only came on about once in 10 days.

Dr. Gilbert also made some remarks, and both the patient and the growth were exhibited.

Dr. Duguid spoke of a patient, an unmarried woman, aged 71 years, who had consulted him for increasing breathlessness, and who had an interesting pelvic condition. Lying obliquely on the left iliac and mid pubic regions was a hard lobulated mass. One of the protuberances overlapped the symphisis pubis. The mass measured 8in. by 4in., and was slightly moveable. The patient has been aware of the tumour for 12 months. There was no pain. She had complained of dyspnœa for two years. The physical examination of the lungs revealed some râles over the right scapular region. At a later date bubbling râles were heard over both apices and infra-clavicular regions. A slight dry cough is present. The patient was able to eat and drink well. She had had frequency of micturition for 10 years. The rectal function was unimpaired. There was no history of internal haemorrhage in earlier life, nor of any irregularity of the menses, which ceased 20 years previously. Dr. Duguid had not been able to examine the patient with X-rays, nor had he made a vaginal examination. He was inclined to regard the case as an old fibroid, undergoing malignant, probably sarcomatous, degeneration. The lung condition was probably secondary.

Dr. F. S. Hone showed two cases of Raynaud's disease.

Dr. H. S. Newland demonstrated the following particulars:—

1. A child 3½ suffering from Raynaud's disease. In the belief that the case was one of splenic anaemia, splenectomy had been performed.

2. An infant aged 1 month, suffering fron congenital stenosis of the pylorus. Posterior gastro-enterostomy had been performed.

Dr. J. A. G. Hamilton gave a demonstration on the following pathological specimens:—

(1.) Two ovarian cysts with twisted pedicles; the axial rotation in each case had almost separated the pedicle.

(2.) A large ovarian tube in which the axial rotation had completely separated the tube from the uterus.

(3.) A fœtus and placenta from an extra-uterine pregnancy, which had ruptured into the left broad ligament. The pregnancy in this case was a developing one, and had gone on to four months; the placental site bled very freely, the haemorrhage was controlled with difficulty by undermining and packing. The gauze tampon was left in situ with one end brought through an opening in Douglas's pouch.

(4.) An immense ovarian tumour which had undergone carcinomatous degeneration. The adhesions all round were very dense and difficult to separate. There was no pedicle; the uterus had to be divided across and used as a pedicle.

MEDICO-POLITICAL.

On September 8, 1914, representatives of the Friendly Societies' Association of New South Wales waited upon the Council of the N.S.W. Branch of the B.M.A. for the

purpose of pointing out that efforts were being made by the Orders to secure the continuance of full sick and funeral benefits to members who are or may be affected by the depression of trade during the war, and to invite the Medical Officers of the Lodges to assist in regard to the medical benefit. It was suggested that a list should be drawn up of the names of those members who were under disability, and the continuance of whose sick and funeral benefits was being secured to them by the contributions of the other members of the Lodge. This list should be supplied to the medical officers in order that they might be induced to give the medical benefit free of cost to the Lodge. The President, Dr. D. Thomas, in replying to the deputation, stated that the Council was not in a position to commit the medical officers to any promise to abate or remit their charges for attendance in the cases referred to. The Council would undertake to place this subject upon the agenda paper of the meeting of the delegates of the Local Associations of members with the Council, to be held on October 1 and 2, 1914.

BALLARAT DIVISION, VICTORIA BRANCH.

A meeting of the Ballaarat Division was held at the Y.M.C.A. rooms on August 6th, aat 8.30 p.m., Dr. Richards, the President, in the chair. Dr. Kelly gave an account of the conference between the Friendly Society delegates and those of the Association. His report was listened to with much interest. In the discussion various speakers urged that a settlement should be arrived at as soon as possible. It was generally agreed that the profession in the suburban districts of the metropolis should be organised as rapidly and thoroughly as possible, and that the members be urged to contribute to the guarantee fund. It was further suggested that full information in regard to the state of the negotiations should be given to the various divisions, in order that the interest of members might be kept up. *

Four members were appointed to give the views of the division to the various councils in Melbourne in connection with the distribution of milk. Dr. Dennis's resignation as Honorary Secretary was received by members with regret. Dr. Dennis has commenced practice in Melbourne. Dr. Mitchell thanked Dr. Dennis on behalf of the members for the excellent manner in which he had conducted his honorary officership, and spoke highly of his professional work in the district. He wished him every success in his future career. Dr. Hardy supported Dr. Mitchell, and all the members present spoke to the same effect. Dr. Richards made a presentation to Dr. Dennis on behalf of the members of the division. Dr. Dennis responded, and thanked members for their gift. Dr. Langley was appointed Honorary Secretary.

A meeting of the Council of the Victorian Branch was held at the Medical Society Hall, Melbourne, on September 10, 1914.

It was determined to tender a dinner at Scott's Hotel, on September 19, 1914, to those members of the medical profession who had been selected for the Australian Imperial Expeditionary Force, and to other medical men who are going as volunteers.

Dr. A. L. Kenny reported that he had been informed that a shortage of anæsthetics in Australia may occur as the result of the embargo by the British Government on their exportation from England; he had since received a reassuring letter from the Secretary of Defence that it was not anticipated that the amount of anæsthetics taken from Australia with the Expeditionary Force would in any way inconvenience the civil population. The President was empowered to take steps to endeavour to have the embargo removed from anæsthetics and cotton goods used in surgery.

The following members were elected to the Branch:—
Dr. William E. Wilson, Charlton, and Dr. Alan F. Jolley.

* These negotiations have been suspended temporarily owing to the war (vide M.J. of A., Aug. 15, 1914, p. 157). We are informed that the work of the organisation of the profession in Melbourne suburbs is proceeding satisfactorily, and that a considerable number of members have subscribed to the guarantee fund.

The Ethical Committee reported, in answer to an inquiry from a country practitioner, that it was a rule of the Medical Defence Association that a member should not hold an honorary position to a football, racing or sporting club, and that in its opinion it was inadvisable for him to hold the honorary position of Surgeon of an Agricultural Society to which he had been appointed without his knowledge.

Medical Societies.

(Affiliated with the British Medical Association.

CENTRAL NORTHERN MEDICAL ASSOCIATION.

A general meeting of the Central Northern Medical Association was held at the Chamber of Commerce, Scott Street, Newcastle, on Thursday, August 27th, Dr. Ken. Herring, the President, in the chair.

The meeting endorsed the action of the Queensland Branch with reference to members called out on active service.

Dr. Bean, of Wallsend, was elected delegate to the annual meeting to be held in Sydney. The business of this proposed meeting was then discussed in detail. Particular attention was given to Dr. Pockley's scheme for medical assurance.

The resignation of Mr. Barr Brown, Hon. Organiser to the C.N.M.A., was received with much regret.

Dr. J. C. Douglas was elected Hon. Auditor, vice Dr. Davis.

The following new members were duly elected:—
Drs. Kempt, Martell, Vincent-Welch, Arnold.

Reviews.

MEDICINE.

"The Practice of Medicine," by Tyson and Fussell* is a text book of medicine designed especially for practitioners and students, and constructed on much the same lines as Osler's well-known text book. The present volume is the sixth edition, and has been re-written to a considerable extent, especially the sections on pellagra, poliomyelitis acuta, and caisson disease. To other sections, chiefly those dealing with typhoid, tuberculosis, and diseases of the heart and kidney much has been added. The book aims at covering more or less the whole field of internal medicine, and quite new work has been added on such subjects as diseases of the pituitiry and thymus glands, erythema, indicanuria, hypo and hyperthyroidism, etc., and every endeavour has been made to bring the book up to date. As a text book for students the book can be heartily recommend. The subject matter is given very concisely, but in some cases so concisely that the practitioner reading it cannot help a feeling of disappointment that so little has been said. This is especially the case in the rewritten article on poliomyelitis. In view of the large amount of work done within recent times on this subject the reader naturally expects to find more than two and a half pages devoted to it. In the chapter dealing with cardiac irregularities, the authors have so condensed their subject matter as to sacrifice clearness, and possibly even accuracy. In spite, however, of these minor defects the book will undoubtedly be of considerable use to students; it will also be found to be a handy volume for the practitioner, especially in view of the fact that many modern tests, such as the phthalein test for renal sufficiency and others, as described in detail. The short pithy accounts of the various diseases are excellently given, and render the work readable and interesting. They are, however, too brief, and this fact limits the value of the volume as a book of reference.

*The Practice of Medicine, by James Tyson, M.D., and M. Howard Fussell, M.D. Sixth edition, with six plates and 179 other illustrations. No. of pages, 1211. Philadelphia: F. Blakiston's Sons and Co.

Public Health.

INFECTIVE DISEASES IN WESTERN AUSTRALIA.

The notifications received by the Department of Public Health of Western Australia for the week ended 22nd August, 1914, were:—

District.	Typhoid.	Diphtheria.	Scarlet Fever.	Phthisis.	Erysipelas.	Septicæmia.
Fremantle	—	3	—	—	—	—
E. Fremantle	—	1	—	—	—	—
Melville	—	1	—	—	—	—
Claremont	—	1	—	—	—	—
Subiaco	—	3	—	—	—	—
Leederville	—	—	—	—	1	—
Perth	2	1	—	2	—	1
Perth, North	1	—	—	—	—	—
Victoria Park	—	—	—	1	—	—
Kalgoorlie	—	—	1	—	—	—
Boulder	—	3	—	—	—	—
Parkerville	—	1	—	—	—	—
Dowerin	—	—	—	1	—	—
Narrogin	—	1	—	—	—	—
Total	3	15	1	4	1	1

INFECTIVE DISEASES IN QUEENSLAND.

The following notifications have been received by the Department of Public Health, Queensland, during the week ended September 5th, 1914:—

Notifiable Disease.	No. of Cases.
Typhoid Fever	5
Diphtheria	44
Varicella	28
Phthisis	8
Erysipelas	2
Scarlet Fever	9
Ankylostomiasis	5
Puerperal Fever	1
Total	102

SMALL-POX IN SYDNEY.

The number of small-pox cases, reported to the Department of Health, New South Wales, during the week ended 6th September, 1914, were:—

City of Sydney and Metropolitan District	11
Country—	
Armidale	1
Quirindi	1
Walgett	1
Total	14

The number of smallpox cases reported to the Department of Public Health, New South Wales, during the week ended 13th September, 1914, were:—

City of Sydney and Metropolitan District	13
Country (Quirindi)	1
Total	14

HEALTH OF SYDNEY.

Report of the Medical Officer of Health for the month of August, 1914:—

The mortality return for August, as supplied by the Government Statistician, shows that 746 deaths occurred in the metropolis, including 24 deaths of individuals previously resident outside the metropolis, and deaths classified as taking place in the islands and shipping in the harbour. Thus calculating on an estimated population of 725,400, the annual deaths rate for the month works out at 12.34 per 1000.

Deducting the deaths of persons, non-residents of the metropolis, in the mental hospitals at Leichhardt and Hunter's Hill (Callan Park and Gladesville), and adding the deaths of previous residents of the metropolis occurring at the Benevolent Asylums, Mental Hospitals, and Consumptive Sanatoriums situated outside the metropolis, the number of deaths was 728, giving a corrected deaths rate of 11.7 per 1000.

Among children under one year of age, 119 deaths were recorded for the metropolis. There were 1959 births during the month, giving the exceptionally high rate of 32.37 per 1000 of the population, being 10 per cent. above the average of the previous five years.

The infantile mortality rate for the month was therefore 61 per 1000, being 5 per cent. below the average for the previous five years.

Infectious diseases were responsible for 20 deaths, of which 4 were due to influenza, 1 to whooping cough, 5 to diphtheria, 3 to typhoid fever, 1 to erysipelas, and 6 to puerperal fever. Diarrhœal diseases were credited with 13 deaths, 7 of which were under 1 year of age.

Phthisis caused 47 deaths; pneumonia, 77; cancer, 42; diseases of the heart and blood vessels, 97; Bright's disease, 49; prematurity, 39; senility, 49; accident or negligence, 25.

Compared with the average in August for the previous five years, there were increases in the number of deaths from senility, developmental diseases of infants, pulmonary diseases and hæmorrhage of the brain, with decreases in infectious diseases, cancer, and diseases of the heart.

One hundred and fifty-eight cases of scarlet fever, 127 of diphtheria, 18 of typhoid fever, and 2 of infantile paralysis were notified during the month of August.

These figures show a decrease on those of the previous month of 42 in the case of scarlet fever, 65 in the case of diphtheria, and 11 in the case of typhoid fever.

Twenty cases of phthisis (consumption of the lungs, and consumption of the throat) were notified under the City Council's by-laws, and 18 premises were disinfected by the Council's trained staff after the death or removal of the patients.

J. S. PURDY,
Medical Officer of Health.

INEBRIATES IN VICTORIA.

The Inspector of Inebriate Institutions in Victoria has presented his report for the year 1913 to the Houses of Parliament. In the Lara Institution for men, the average daily number of inmates was 38, as compared with 33 in 1912. 120 persons were admitted during the year. The Inspector states that a larger number of voluntary patients were dealt with than hitherto. The institution has been in good order; no changes have taken place in the personnel, and the health of the inmates has been uniformly good, no deaths having taken place. The cost of the institution to the Government was £1173, with an additional expenditure of £181 for public works. This amount represents the excess of expenditure over income derived from maintenance fees, proceeds of sales, rent of land and fees for sheep dipping. In the women's institution, "Brightside," which was established by the Salvation Army for the care and treatment of inebriate women, there were 18 patients resident at the end of 1912, and 16 at the end of 1913. 47 were fresh admissions, 17 of which were replaced cases. Of the 65 women, 60 were married, 16 of whom were living separated from their husbands, and 1 was divorced, 14 were returned as being "immoral," and all the 65 were "markedly untruthful." One of the patients died during the year, 3 were transferred to the receiving house, 2 escaped, and the orders were rescinded in two others. 21 patients are said to be doing well. 2 of the patients died subsequent to their discharge. In regard to occupation, 34 were "housewives," 18 domestic servants, 10 had no occupation, and 1 was "theatrical." In all save 29 there was a definite history of inebriatry or insanity. 41 of the patients were said to drink anything obtainable, with a preference for spirits; in a few cases laudanum, veronal, and sulphonal were taken as well as alcohol, and in one case the inebriant was stout. The average duration of the residence in the institution was 4 1-3rd months. Of the diseases complicating the alcoholism were mental disease (16), hepatic disease (15), neuritis (9), gastritis (5), and syphilis (1). In the Lara Institute, 65 of the 120 persons admitted had received a "college" education; 51 a "good" education, and 4 an "elementary" education. 18 patients were clerks, 17

labourers, 14 artisans and mechanics, 12 commercial travellers and salesmen, and 11 were entered as belonging to the "general" professions. 4 medical men and 2 lawyers were among the patients. The inebriants used were spirits, beer, wine, including champagne, absinthe, morphine, cocaine and opium. Of the predisposing causes heredity in 28 cases. In 77 caces "sociability" was said to be an exciting cause, in 15 business worries, in 13 domestic trouble, and in 10 ill-health. The average period of residence was 2 2-3rd months. Among the more frequent complications were neuritis (30), hepatic disease (37), gastritis (19), and mental disease and epilepsy (9). Only two cases of syphilis were recorded. 50 of the patients were doing well, 6 were improved, 1 died after discharge, and 3 were certified as insane.

During the 6½ years since the institution had been opened, 566 men had been treated. 44 of these died, 12 were sent to institutions for the insane, and 52 have disappeared. Of the remaining 419, 208 were entered in the books as "doing well"; this is equivalent to 50 per cent. 265 were benefited by the treatment, i.e., 63.2 per cent.; these include recoveries and those improved. In 36.8 per cent., treatment was a failure. Considerable importance is attached to the proper selection and classification of patients admitted. The experience made in the New Zealand Home for Inebriates of the indiscriminate admission of hopeful and hopeless cases has been taken into account. The medical officer suggests that persons who were suffering from serious communicable diseases, who have been discharged from the institute for misconduct, and who are irredeemable, should not be admitted.

HEALTH OF VICTORIA.

During the fortnight ended 1st September, 1914, the following returns have been received from the Medical Officer of Health of Victoria:—

Whole State.	Typhoid Fever.	Diphtheria.	Scarlet Fever.	Pulmonary Tuberculosis.
Cases ...	11	229	19	47
Deaths ..	1	9	1	23

Metropolis.	Typhoid Fever.	Diphtheria.	Scarlet Fever.	Pulmonary Tuberculosis.
Cases ...	4	117	11	24
Deaths ...	1	6	1	15

The number of cases of diphtheria notified from the various municipalities for the fortnight, ended 1st September, were as follows:

Municipality.	No. of Cases.
Bendigo	31
South Melbourne	17
Melbourne	14

THE HEALTH OF WESTERN AUSTRALIA.

Dr. James W. Hope, Principal Medical Officer, Commissioner of Public Health, and Chief Quarantine Officer for the State of Western Australia, has issued his report for the year ended December 31, 1913. The report contains a large amount of information of first importance, and some comments on the activity of his department. These comments are obviously addressed to the public, and even if Dr. Hope has indulged in a somewhat pictorial representation of his various subjects at times, they should be fruitful as lessons in hygiene to a receptive population.

Under the heading "Hospitals" we are told that there are 2 administered under the Hospital Act, 1904, viz., Perth and Fremantle, 21 under departmental control, 26 under the control of local committees, 3 at timber mills, and one sanatorium for consumptives. The cost of each patient in the Government hospitals worked out at 8s. 2½d. per day; that of the assisted hospitals was 21s. 7d. per day, of which the Government contributed 4s. 9½d. Special grants were made to meet emergency expenditure, and amounted to £860 10s.

Public Health.

The cost of carrying out the work of preserving the health of the populace in the whole State was £111,944 19s. 9d., of which the following sums were expended for the purposes named:—

	£	s.	d.
Salaries—Head Office	1,900	15	1
District Medical Officers and Hospitals	25,422	5	5
Maintenance of Government Hospitals.	20,708	2	9
Grants to Public and Assisted Hospitals	39,986	6	3
Grants to District Maternity Nurses ..	433	3	6
Incidental.			
Postage, Telephone, Stationery	280	6	2
Travelling and Transport	301	8	10
Miscellaneous	263	4	3
Wooroloo Sanitorium	414	8	5
	£89,710	0	8
Health	22,234	19	1
Total	£111,944	19	9

There were 33 municipal local health authorities in the State in 1913, and in addition 44 Road Boards and 36 Local Boards of Health acted as health authorities. In those districts where a local health authority could not be secured, a system inaugurated some six years ago of a "village area" sanitary service was in force. The department contracts for an efficient sanitary service under the arrangement.

In order to give a comprehensive idea of the efficacy of the work carried out by the department, Dr. Hope appends some figures culled from the Government ment vital statistics. The birth-rate for the year was 29.39 per 1000 of population, the illegitimate birth-rate was 1.31, and the death-rate was 9.35. While the birth-rate has increased steadily since 1910, the death-rate shows a marked decrease. The natural increase is higher than that in any of the other States, and considerably higher than that of New Zealand, the United Kingdom, Japan, Russia, Germany, Belgium, or France. In regard to the infantile mortality, the number of deaths of children under 1 year of age per 1000 births was 69.97, as compared with 141.22 in 1903. In 1904 the rate in Russia was 232. Before leaving this subject, Dr. Hope sets out in a very forcible manner the great advantages of breast feeding.

Tuberculosis.

During the year 424 cases of chronic pulmonary tuberculosis were notified; 206 persons died of the disease. In addition 27 persons died of other forms of tuberculosis. It appears that the mortality from tubercular affections has remained fairly constant during the last five years. Dr. Hope records that two methods of treating the tuberculosis were brought prominently before the public. He states that the introduction of these methods has raised the hopes of those suffering from the disease. The first method was Friedmann's treatment and the second Mehanarto's serum. It is with some surprise that we read that Dr. Hope mentions the former treatment as being of some possible value. The leaders of the profession in Germany have formed a very unfavourable opinion of the treatment and also Dr. Friedmann's methods. In regard to Mehnarto's serum, it appears that four patients were treated for about three months without any apparent good effect having been noticed. Drs. Atkinson and Webster, who report on this treatment, state that the marked good result claimed by Dr. Mehnarto have not been obtained by them. In any case it would be quite impossible to judge of the efficacy of a new form of treatment for consumption by the results obtained in four cases. The experience of the various so-called specifics has been almost uniformally disappointing, with the exception of that made with tuberculin. Dr. Hope mentions the trial given to Dr. Paget's method, which, however, was not completed. We are inclined to the opinion that the subject of the efficacy of various methods of treatment should be left to clinicians and not be dealt with in a Health Officer's report.

Diphtheria.

The incidence of diphtheria appears to be high. During the year 957 cases were notified. The majority of these

cases occurred in the April to June quarter. The notifications received in this quarter reached 444 in 1909, 380 in 1910, 356 in 1913, 228 in 1911, and 164 in 1912. There were 46 deaths from diphtheria, which equals a case death-rate of 4.8 per cent. This is lower than the case death-rate in the preceding four years. The majority of cases were in Perth and Subiaco. The result of systematic bacteriological examination revealed Klebs-Lœffler bacilli in 1688 out of 6,657 swabs taken from the school children's throats.

Scarlet Fever.

During the year only 128 cases of scarlet fever were reported; one patient died. In 1910 scarlatina was very prevalent; in 1912 it was less so, and in 1913 the incidence was the lowest for the series of five years.

Enteric Fever.

Eight hundred and eight cases of enteric fever were notified during the year. The number in 1912 was 1003, and in 1911 691. Sixty-three patients died, which is equivalent to a case deathrate of 7.8 per cent. The case deathrate in 1910 was 5.4, and 1911 13.6, and 1912 10 per cent. The majority of the cases occurred in Perth. Dr. Hope states that the Health Department has offered all large employers of labour vaccine at a nominal cost. There had however, been but little response to this offer. No mention is made in the report of an endeavour to induce the medical practitioners of the State to take this matter up.

Other Infective Diseases.

Nine deaths from measles were recorded during the year, and 20 from whooping cough, 8 from influenza, and 1 from leprosy; 41 cases of malaria occurred in the northern part of the State, and two of the patients died; 100 cases of erysipelas, with 3 deaths, were notified, and 101 cases of beri-beri, with 4 deaths.

Venereal Diseases.

No statistics are given in the report, and Dr. Hope confines himself to a survey of some of the returns from other countries. He suggests that the Public Health Laboratory should undertake to carry out the Wassermann reaction free of charge for patients who are certified by their own medical man that they cannot afford to pay for it. He is also of opinion that salvarsan should be provided by the Government, either free or at a reduced cost, for those who cannot afford to pay the full cost of the drug. The majority of the Friendly Societies exclude treatment for venereal diseases from their benefits. These societies had been approached by the Health Department with the view of removing this disability. No definite steps, however, had been taken by the societies. The Perth Hospital had opened its doors to sufferers from these diseases.

Divers' Paralysis.

Caisson disease is apparently common in the pearling industry. In 1910 11 men died of it; in 1911 10, in 1912 9, and in 1913 29 men died. Their ages varied between 20 and 35 years. In all 339 divers are employed. Dr. Hope suggests that the employers should investigate the matter in order that the loss of life should be reduced. The experience of the British Admiralty and the regulations drawn up on the basis of the report of Dr. Haldane, Dr. Boycott, and Lieutenant Damant, as well as the records of various suggestions carried out within the last few years in the United States, Austria, France, and Germany are not mentioned in the report. Modern methods of decompression should suffice to reduce this mortality to a very small figure.

Cancer.

One hundred and seventy-eight persons, representing 0.57 per 1000 of population, died of cancer during the year. Dr. Hope apparently favours the theory of a parasitic causation of cancer, although he expresses himself with caution.

Maternity.

The lying-in condition in the State require considerable attention; 9233 births were registered during the year, and 43 mothers died. There were 25 cases of puerperal fever, with 9 deaths. The cause of death in the remaining 34 cases is not stated. At the Fremantle Midwifery Training School, which has been in existence since 1910, 65 midwives have been registered by the State Board. Dr. Hope complains, with every justification, that the maternity hospitals are not subjected to the control of his department. There appears to be a shortage of beds in Perth for obstetric cases. Ten qualified midwives are subsidised by the Government, and carry out excellent work in sparsely populated districts. In many of the country hospitals subsidised by the Government there are maternity wards, and the policy of the Government is to supply such wards wherever they are needed.

Smallpox and Vaccination.

The energetic steps taken by Dr. Hope in checking the spread of smallpox in Western Australia have been dealt with in a special article in the "Medical Journal of Australia" (August 29th, 1914, p. 210). The chapter of the report dealing with this subject is a powerful plea for compulsory vaccination.

School Hygiene.

Of the 384 schools in the State 177 have been examined during the year. In all 10,454 children were inspected, and 20,241 defects were recorded. 62 per cent. of the children revealed some defect.

Diseases of the Skin.—725 children harboured pediculi capitis. There were 51 cases of herpes, 34 of eczema, 24 of impetigo, 22 of ringworm and 16 of acne.

Ophthalmic Defects.—15 per cent. of the children were found to be astigmatic, 7 per cent. myopic, and 4 per cent. hypermetropic. Stabismus was common; 169 case of blepharitis were dealt with.

Defects of Nose and Throat.—5906 defects of the faucial or pharyngeal tonsil or of the nose were met with. Enlargement of the cervical lymphatic glands was present in 19.6 per cent.

Diseases of Teeth Bone and Joints.—47 per cent. of the children had one, two or three teeth in a carious condition, and 33.5 per cent. had four or more carious teeth. The Odontological Society of Perth had accorded free attendance and treatment at a dental clinic, and have dealt with 895 cases during the year; 261 children showed some spinal deformity; in 221 of these cases there was marked scoliosis.

Diseases of the Chest.—175 cases of bronchitis, 44 of phthisis, and 13 of deficient expansion of the chest were detected. There were 79 cases of heart disease, 49 being instances of mitral regurgitation. In 20 cases the heart was dilated; 307 children were suffering from anæmia.

Defective Hearing, etc.—2.2 per cent of the children had defective hearing. There were 20 cases of otorrhœa, 15 of earache, and 16 of cerumen.

Defects of the Nervous System.—In 22 cases the results of infantile paralysis were discernible; 25 children were classified as of weak intellect; 3 suffered from minor epilepsy, 6 from chorea, and 13 from nervous movements.

Other Defects.—In 31 cases phymosis was present, in 11 cases hernia, and in 5 cases varicocele were present; 2 cases of goitre were discovered among the children.

Food and Drugs.

Some important details in regard to the inspection of food, the control of the milk supply, and the regulations obtaining at the public abattoirs are included in the report. In regard to proprietary medicine, the Health Department, in endeavouring to control the traffic in nostrums by insisting on the disclosure of the ingredients, This suggestion has, we are told, given rise to much discussion in the Houses of Parliament.

The report contains several further matters of interest, a large number of tables dealing with the subjects of the various chapters, and a report by the Chief Inspector of Factories. The last named has already been dealt with in the "Medical Journal of Australia" (September 12, 1914, pp. 251-252).

University Intelligence.

UNIVERSITY OF WESTERN AUSTRALIA.

The junior and leaving standard examinations for school certificates will be held in Perth and country centres on November 16th, 1914, and following days. A scholarship of the value of £50 per annum, tenable for three years, will be awarded to a candidate who qualifies for entrance for the Faculty of Science. The successful candidate will be required to complete the three years' course of Agricul-

tural Science and to take the degree of B.Sc. of the University. Applications should be sent in on the proper form on or before October 1st, 1914.

SYDNEY UNIVERSITY.

The New Chancellor.

The Senate of the University of Sydney, at its meeting of September 14, 1914, elected the Hon. Sir William P. Cullen, K.C.M.G., M.A., LL.D., Chancellor in the place of late Sir Normand MacLaurin. Sir William Cullen is 59 years of age. He was called to the bar in 1883 and took his degrees in Laws in 1887. In 1905 he took silk, and in 1910 was appointed Chief Justice of New South Wales. In 1891 he was elected to the Legislative Assembly and in 1895 to the Legislative Council. In 1911 he was knighted, and the order of K.C.M.G. was conferred on him in 1912. His interest and activities in University affairs has been considerable, and his selection to the chief office of the University will meet with general approval.

Hospitals.

NEW SOUTH WALES HOME FOR INCURABLES.

The thirteenth annual report of the New South Wales Home for the Incurable has just been issued. During the year ended June 30th, 1914, 9 new patients were admitted, 4 were discharged, and 5 died. There were 42 patients in the Home on June 30th, 1914. The revenue account showed an excess of expenditure of income of £200. On the other hand, legacies to the amount of £1400 had been received in the previous year, and the committee had been advised that an additional £900 would shortly be available from various estates. It was determined to extend the building by the erection of a wing to accommodate 30 further patients. This extension would cost £7000. An appeal for further funds to meet this expenditure is being made.

ROMA HOSPITAL, QUEENSLAND.

At the annual meeting of the Roma Hospital, the Medical Superintendent, in his report, stated that during the year 415 in-patients had been discharged, cured or relieved, and the death-rate was 3.5 per cent. He pointed out that the institution of an X-ray and electrical department, and of a bacteriological laboratory was essential, in order that the work of the hospital might be carried out in a satisfactory manner.

NEW SOUTH WALES SATURDAY HOSPITAL FUND.

It was announced at the 20th annual meeting of this fund, held at the Town Hall, Sydney, on September 4th, that £9214 6s. 2d. has been received during the year ending May 31st. This sum is £342 10s. 5d. less than the sum collected last year. In the Treasurer's report, it was suggested that £8,450 be distributed among 32 hospitals.

Sir Gerald Strickland moved, and the Lord Mayor of Sydney (Alderman Richards) seconded, the adoption of the report. Mr. Justice Gordon, in supporting the motion, said that he thought all who realised the gravity of the present situation, and who were helping the patriotic movement, would not forget their own sick.

The motion was carried.

The following office-bearers were elected:—President, the Lord Mayor of Sydney; vice-presidents, Messrs C. T. Starkey and J. H. Harris; chairman of the board, Mr. Justice Gordon; vice-chairman of the board, Mr. D. S. K. Miller; hon. treasurers, Messrs. C. M. Palmer and S. H. Solomon; hon. auditor, Mr. J. W. Davis; hon. solicitor, Mr. Neville M. Montague; hon. gen. secretary, Mr. John J. Cohen, M.L.A.

Medical Matters in Parliaments.

NEW SOUTH WALES.

On August 4, 1914, Mr. Osborne asked the Minister of Public Instruction (N.S. Wales),—(1) How many children are boarded out by the State Children Relief Department to (a) mothers; (b) foster-mothers or guardians? (2) How many mothers are receiving the following amounts for each child, namely, 3s., 3s. 6d., 4s., 4s. 6d., and 5s. per week? (3) What payments are made to foster-mothers or guardians? (4) How many children (wards of the department) are apprenticed to employers—(a) metropolitan area; (b) balance of New South Wales.

Answer,—(1) (a) 6,092; (b) 2,837. (2) Rates for each child—3s., 3s. 6d., 4s., 4s. 6d., 5s. per week. Number of children—890, 325, 1,665, 66, 1,970. (3) According to age and health of children—Under 1 year old, 8s. to 10s. per week; 1 to 2 years old, 7s. to 8s. per week; 2 to 3 years old, 6s. to 7s. per week; over 3 years old, 5s. per week. (4) (a) 312; (b) 1,001.

VICTORIA.

The Friendly Societies Act Amendment Bill passed through all its stages on September 8, 1914, in the Legislative Assembly, and was transmitted to the Legislative Council. The provisions of this Bill are similar to those of the Western Australian Bill (vide infra).

The Chief Secretary moved the second reading on September 8, 1914, in the Legislative Assembly of Victoria to amend the Lunacy Act of 1903. The Bill provided for the admission of voluntary boarders into any hospital for the insane, or receiving house, or other institution for the treatment of persons suffering from mental diseases. The object aimed at is the institution of treatment at an early stage. Voluntary boarders would not be deemed to be lunatics within the meaning of the Lunacy Act, and could obtain their discharge. Certain provisions, however, are included for the compulsory detention of voluntary patients in the interest of the public. The debate was adjourned.

WESTERN AUSTRALIA.

On September 1, 1914, the Legislative Council of Western Australia passed the Friendly Societies Act Amendment Bill through all its stages, and transmitted it to the Legislative Assembly, where it was taken through the three readings without discussion or amendment. The Bill was designed to give protection to the Friendly Societies during the present crisis. Many of the members had joined the expeditionary force, while others were likely to fall out of employment. The societies have asked for some relief for their members, and the Bill would enable them to suspend the contributions of members while they are out of work. Certain safeguards were introduced to avoid the abuse of this power.

In the Legislative Council of Western Australia on September 3rd Mr. C. Sommers asked the Colonial Secretary what steps had been taken by the Government to erect a Maternity hospital as promised in the Governor's Speech at the opening of Parliament.

The Colonial Secretary said that the draft plans had been prepared and approved of by a committee consisting of three members of the medical profession.

QUEENSLAND.

The Workers' Dwellings Act Amendment Bill has reached the committee stage in the Queensland Legislative Assembly. On September 9 its provisions were debated, and a number of amendments were introduced; the majority of these dealt with the economic aspect of the problem, and more especially with the question of insurance and borrowing. The Bill passed through this stage, and was brought up for the third reading on September 9th.

Medical News.

The annual meeting of the Leipziger Verband (Leipzig Union of medical men) was held on June 26 and following days. The proceedings were of more than usual interest in view of the difficulties met with at the end of last and the beginning of this year in connection with national insurance. We hope to publish in a subsequent issue a brief history of the dispute between the medical profession in Germany and the Insurance Societies, and to append to this account a short report of the meeting.

The Organization Committee of last year's International Medical Congress (London) is to be congratulated on the extraordinary feat of having published the transactions of the Congress within six months of its termination. The Transactions are published in one, two or three volumes for

each section, and occupy no less than 12,489 pages. The committee has determined most wisely to form itself into a permanent national committee for Great Britain and Ireland, with Sir Thomas Barlow as Chairman, and Drs. Clive Rivière and A. J. Paterson as Secretaries.

San.-Rat Dr. Oliven has published a report of the German Central Committee for Medical Studies Abroad, dealing with the visit paid to England in the summer of 1913, on the occasion of the International Medical Congress.

Obituary.

DR. BRIAN COLDEN ANTILL POCKLEY.

It is our painful duty to record the death of Dr. B. C. A. Pockley, who died on September 12, 1914, in Simpsonshafen, New Britain, at the age of 24. Dr. Pockley was educated at the Sydney Church of England Grammar School, where he gained the senior scholarship and the Pockley prize. In 1908 he entered the Sydney University, and was regarded by his teachers as one of most prominent and promising students of his year. He took his degree (M.B., C.M.) in March, 1914. Both at school and at the University Dr. Pockley proved himself to be a first-class athlete. He was in the University football team, and was chosen by his compeers as secretary of the University Athletic Club. Among the other positions he held that of the secretaryship of the University Medical Society requires special mention. At the time of his death he was a Resident Medical Officer at the Sydney Hospital. Dr. Pockley was a great favourite at the University, in the profession and in the social circles of Sydney. He was the second son of Dr. and Mrs. Antill Pockley, of Wahroonga and Macquarie Street, Sydney.

Medical Appointments.

Dr. J. A. L. Wallace has been appointed Senior Assistant Medical Officer, Lunacy Department, New South Wales.

Dr. Cecil Purser has been appointed a member of the Board of Health of New South Wales.

Dr. James Eli Webb has been appointed Medical Officer under the Department of Public Instruction, New South Wales, on probation for six months.

Dr. A. Tennent Chapple has been appointed Assistant Medical Officer in the Department of Public Health, New South Wales.

Books Received.

SAJOUS'S ANALYTIC CYCLOPEDIA OF PRACTICAL MEDICINE, by Charles E. de M. Sajous, M.D., LL.D., assisted by Louis T. de M Sajous, B.S., M.D. Volume V., 7th edition, 1914. Philadelphia: F. A. Davis Company. Royal 8vo. pp. 802. Illustrated.
Also, Clinical Desk Index to above (vols. I.-V.), 1914, pp. 177.

DISEASES OF THE EYE, by G. E. de Schweinitz, A.M., M.D., 7th edition. 1913. Philadelphia and London: W. B. Saunders Company (Melbourne: J. Little). 8vo., pp. 979; 350 illustrations and seven Chromo-lithographic Plates. Price 21s.

AUSTRALIAN HOUSE DRAINAGE PRACTICE, by H. G. Wills, A.R., San. I., A.I.S.E. 1914. Sydney: Angus and Robertson, Ltd. pp. 139; illustrated. Price, 7s. 6d.

FLIES IN RELATION TO DISEASE—NON-BLOODSUCKING FLIES, by G. S. Graham-Smith, M.D. 1914. Cambridge: Cambridge University Press. 8vo., pp. 389. Price, 12s. 6d.

THE JUNIOR CADET MANUAL, including the authorised physical exercises, organised games, miniature rifle shooting, first aid, squad drill, swimming, life saving, etc., by Lieut. R. Stupart 1914. Sydney: Angus and Robertson, Ltd. pp. 380; illustrated; demy 8vo. Price, 3s. 6d.

Proceedings of Australasian Medical Board.

QUEENSLAND.

The following persons have been registered under the provisions of the Medical Act of 1867 as duly qualified medical practitioners:—

Walsh, Harvey Sylvester, Brisbane, M.B., Univ., Syd., 1913.

Wilson, Benjamin Gilmore, Brisbane Hospital, M.B., Ch.M., Univ., Syd., 1914.

Medical Appointments Vacant

FOR TRANSFER—AN OLD ESTABLISHED PRACTICE, Northern Pastoral and Agricultural District, income £960, can be increased; Hospital £60, and £170 from clubs on B.M.A. terms. For further particulars, apply to Bruck and Thomson, 15 Castlereagh Street, Sydney.

Diary for the Month.

Sept. 22.—Victorian Branch, B.M.A., Eye and Ear Section.
Sept. 25.—New South Wales Branch B.M.A., Election of Members of Federal Committee of B.M.A. in Australia.
Sept. 25.—New South Wales Branch B.M.A., Ordinary Meeting.
Sept. 25.—Melbourne Hospital, Clinical Meeting.
Sept. 29.—New South Wales Branch B.M.A., Committee Meeting.
Sept. 29.—Victorian Branch, B.M.A., Eye and Ear Section.
Sept. 30.—Victorian Branch, B.M.A., Council Meeting.
Oct. 1 and 2—New South Branch, B.M.A., Annual Meeting of the Delegates of the Affiliated Local Associations of Members with the Council.
Oct. 6.—New South Wales Branch, B.M.A., Council Meeting.
Oct. 9.—New South Wales Branch, B.M.A., Clinical Evening.
Oct. 20.—New South Wales Branch, B.M.A., Council Meeting.
Oct. 21.—Western Australian Branch, B.M.A., Branch Meeting.
Oct. 27.—New South Wales Branch, B.M.A., Committee Meetings.
Oct. 27.—Victorian Branch, B.M.A., Eye and Ear Section.
Oct. 30.—New South Wales Branch, B.M.A., Ordinary Meeting.

Warning Notices.

Medical Practitioners are requested to communicate with the Honorary Secretary of the Branch of the British Medical Association before applying for any appointments referred to below:—

Branch.	APPOINTMENTS.
QUEENSLAND. (Hon. Sec. B.M.A. Building, Adelaide Street, Brisbane).	Brisbane United F.S. Institute. F.S. Lodges at Longreach. F.S. Lodges at Warwick.
WESTERN AUSTRALIA. (Hon. Sec. 230 St. George's Terrace, Perth).	Swan District Medical Officer. All Contract Practice Appointments in W.A.
NEW SOUTH WALES. (Hon. Sec. 30-34 Elizabeth Street, Sydney).	Goulburn F.S. Association. F.S. Lodges at Casino. F.S. Lodges at Orange. F.S. Lodges at Braidwood. F.S. Lodges at Lithgow. Seaham Colliery No. 1, Newcastle. Seaham Colliery No. 2, Newcastle. Killingworth Colliery, Newcastle. West Wallsend Colliery, Wallsend.
SOUTH AUSTRALIA. (Hon. Sec. 3 North Terrace, Adelaide).	The F.S. Medical Assoc. Incorp., Adelaide.

EDITORIAL NOTICES.

Manuscripts forwarded to the office of this Journal cannot under any circumstances be returned.

Original articles forwarded for publication are understood to be offered to the "Medical Journal of Australia" alone, unless the contrary be stated.

All communications should be addressed to "The Editor," "Medical Journal of Australia," B.M.A. Building, 30-34 Elizabeth Street, Sydney, New South Wales.

The following periodicals are required by the Librarian of the New South Wales Branch of the British Medical Association to complete the series for binding. Members who have borrowed these journals are requested to return them as soon as possible:—

"Lancet," January 31, 1914.
"Lancet," February 7, 1914.